

A Work Project, presented as part of requirements for the Award of a Master Degree in
Management from the NOVA School of Business and Economics.

**BUSINESS CONCEPT DESIGN
OF AN INNOVATIVE PRODUCT
Partnership between Nmusic and Rovio Entertainment Ltd.**

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A Project carried out on the Field Lab in Entrepreneurial Innovative Ventures, under the
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I. Executive Summary

Nmusic and Rovio Entertainment Ltd. identified a business opportunity that will merge the digital music and games industries. The growth of digital consumption, enabled by a wide access to technological devices, supports the market potential of this new product. This Work Project focuses on the new product design and development processes, mainly supported by a) gaming literature that explores critical features and players' motivations, and b) market research that allows complementing the existent literature and identifying customer needs and their relative importance. Those needs were interpreted and translated into product characteristics in order to generate *Angry Birds Music*.

Key words: New Product Development; Casual Gaming; Game Design; Digital Music

II. Scope of the Work Project

This work project intends to develop the business concept and product design emerging from a venture between Rovio and Nmusic – Angry Birds Music – that approaches an innovative and blue ocean¹ market flaw. Hence, this is a highly pioneering product since it merges gaming and streaming concepts, a collaborative arrangement that had not been developed and tested before. Since the launch of Angry Birds, Rovio has experienced strong growth², launching innumerable products related to the theme Angry Birds, including games, merchandise, books and animation. Being Rovio's desire and vision to continue exploring the successful brand [Forbes 2012], and streaming a growing trend in the digital music industry³, Nmusic saw a window of opportunity to engage in the creation of an innovative product joining these two markets groups – games and music. This revolutionizing idea can leverage the position of Nmusic and open new horizons for a global expansion, being the company's ultimate goal to convince new markets to subscribe its digital music-streaming platform. Besides, Rovio will add to its product portfolio a completely innovative product that will leverage the strength of Angry Bird's brand and Rovio's position in the global market. The launch of a product like AB Music will also drive major transformations for the entire gaming and music streaming industries, namely, innovation, economies of scale and scope, gained by technology merging, and suppliers' network integration, at both forward and backward levels [Mateos-Garcia, et al 2008: p.19, 60] Gamified streaming platforms and digital games with a more developed focus on the sound/music element will emerge as new requirements from customers arise, driving them to innovative virtual experiences. These industries will no longer evolve separately; instead, connection points between both will gradually increase [Hong, 2010].

This work project was supported by two complementary analyses. Firstly, my colleague Ana Filipa Conduto elaborated an analysis of the digital music and mobile casual games markets, highlighting key drivers, emerging trends and critical success factors, which allowed not only to understand the global context and

¹ Blue Ocean is a terminology for all the industries that do not exist today, in which demand is created rather than fought over [Kim and Mauborgne, 2005].

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² In 2011, total revenue amounted to €75.4 million and in 2012, after a 101% growth, the company reached €152.2 million total revenues. [Rovio - <http://www.rovio.com/en/mobile-news/284/rovio-entertainment-reports-2012-financial-results>]

³ Online music streaming revenues increased by 40% in 2012 [Siemer Associates, 2013]

competitiveness of these industries, but also to evaluate which countries or regions are more attractive for the launch of this new product. Secondly, my colleague Ana Cláudia Correia developed the business model analysis associated to this new product development process, as well as the competitive strategy to market it.

Hence, the research question to this work project is: *What is the business concept that combines mobile gaming and music that would mostly attract Rovio customers and Angry Birds fans and other potential consumers?* In order to answer this focal question, other sub-questions needed to be analyzed: *what are the market or consumers needs in mobile gaming?, what are the market or consumers needs in music-streaming?, how complex are the technical features to address that needs?, which consumer features can be created in a sustained and competitive way?, how can we group those features in order to generate product concepts?, which alternatives of business concepts and product design are more attractive and valuable to consumers? and which alternatives are more attractive to Rovio and Nmusic?*

III. Methodology

This project starts with the comprehension of the digital music and mobile casual games industries and the subsequent justification of the attractiveness of a merger between these two markets, personalized by Angry Birds Music. Although this part will not be extensively explored in this work project⁴, it is an essential piece and it was analyzed to support the business concept at study. Complementarily, a market research was conducted in order to identify and prioritize the consumers' needs that motivate and drive the creation of the product at stake. The study was conducted by approaching two different levels of analysis: external and internal. Externally, two sequential online surveys, informal conversations and interviews were organized; besides, external market studies and gaming literature⁵ were also taken into consideration. Internally, Nmusic's staff knowledge was utilized and the core activities and products of both companies were carefully studied.

After screening the relevant market needs, it was possible to list several consumer features that should be included in the final business concept and product design, and test them according to the perspective of

⁴ Filipa's Work Project will cover the market analysis that supports this opportunity.

⁵ Since there is very little literature on casual games, this project will be supported by literature on general digital gaming and the extrapolations to casual gaming will be carefully done.

consumers. After receiving the feedback from consumers, several business concepts were created through the combination of different features and the correspondent sketches were drawn to materialize each of those. Then, it was developed a concept selection matrix in order to score each product concept and a ranking was generated. Finally, the business concept with the highest score was evaluated using the House of Quality tool⁶.

A. Literature Review

Firstly, it is necessary to have an accurate definition of the type of games studied in this project – mobile-casual games. Casual games “are video games developed for a mass audience, which are easy to learn, fun, quick to access and require no previous special game skills, expertise or regular time commitment to play” [Casual Games Association: 3]. However, several casual games can also be mobile games, this is, games designed to be played in mobile devices such as smartphones, PDA’s, portable media players and tablets [Casual Games Association, 2012]. The main characteristics that should be taken into account regarding casual game design are: fiction, usability, interruptibility, right level of difficulty and juiciness⁷ [Juul, 2010: 30].

Literature on gaming⁸ is very diverse and, from the several models that support game design, the most relevant ones (to the scope of this project) were selected and grouped in the following themes: a) psychological perspective on motivations and needs⁹, b) technology and media adoption models, c) models of game usage and customer experience, d) gamer types taxonomies, and e) the role of music in digital games.

Focusing on MMORPG¹⁰, Nick Yee (2007) has followed a social interaction perspective, arguing that different players use games for different reasons, so a game should be able to satisfy these different motivations.

Yee highlights nine player’s motivations that can be organized in three main components: achievement, immersion and social. Ryan, Rigby and Przybylski (2006) have interpreted the self-determination theory,

⁶ The House of Quality, firstly known as “Quality Function Deployment”, was developed in Japan in 1972 at Mitsubishi’s Kobe shipyard site. This is a graphic tool that allows linking customers’ needs to product capabilities in order to support the design, manufacture and marketing processes necessary to the launch of a new product or to improve an existing one. In some cases, this tool was proved to reduce design time and costs and after launch tinkering. Besides, it also allows different departments to work in close relation in order to have a successful performance (Hauser and Calusing, 1988).

⁷ The author of *A Casual Revolution*, Jesper Juul (2010), proposes a hierarchy for these game features, being fiction the most important and juiciness the least important; these conclusions will be used in the hierarchization of needs in the business idea section.

⁸ Gaming literature can be divided in five main categories: research, theory, reviews, discussion and development [Dempsey et al, 1996].

⁹ Several studies on players’ motivations have arisen, however there is still no integrated model [Barbaros, 2009].

¹⁰ Massively-Multiplayer Online Role-Playing Games

previously developed by Ryan and Deci (2000), in the light of video games, concluding that the satisfaction of three psychological needs – competence, autonomy and relatedness – increases the intrinsic motivation for the task, in this case, gaming¹¹.

There are factors that determine the adoption of technologic and media products by customers, more specifically, three variables influence players' intention to use (play) a certain game: a) perceived usefulness¹², b) perceived ease of use¹³, and c) perceived enjoyment¹⁴. [Ha et al, 2007 and Park et al, 2013]. Another study evaluated the role of communities in online games adoption processes, highlighting the importance of these groups for customers' loyalty, which ultimately result in an expanded network of gamers. Sociability, usability and perceived enjoyment are the main drivers of these communities¹⁵ [Hsu and Lu, 2005].

Choi and Kim (2004) identified customer loyalty to the game as a consequence of the quality of the customer experience, which, in turn, depends on personal (with the game system) and social interactions (with other people). Goals, operators and feedback, along with communication place and tools, can be managed in order to create an optimal experience¹⁶. Also, personalized gaming increases players' satisfaction because it enables a better fit between the player's personality and the game environment [Bakkes et al, 2012]. Consequently, player loyalty and enjoyment will emerge, contributing to make the game experience a commercial success¹⁷.

¹¹ Rigby (2006) tested for supportive game features of these needs, such as: dynamic difficulty mechanism, heroism meter and achievement badges (competence); characters customization and the ability to influence the type of rewards received and in-game dialogues (autonomy). These conclusions will be used in AB Music features selection, since the fulfillment of these needs leads players to experiment increased enjoyment, which leads to a greater motivation for future play, recommendation intention and more positive ratings to the game at play [Ryan et al, 2006].

¹² As a way to increase perceived usefulness, games should embrace opportunities for self-expression, promote visibility and prioritize innovativeness [Ha et al, 2007]. These conclusions will be used in to AB Music features selection.

¹³ Maximize simplicity, include online tutorials to familiarize users with mobile game operations and adapt versions of mobile games to user terminals in order to improve the game experience are game characteristics that will enhance perceived ease of use, which is considered a pre-requisite of enjoyment [Zhou, 2012]. These conclusions will be used in to AB Music features selection.

¹⁴ Psychological factors have a greater impact on perceived enjoyment than technical factors, for game designers should develop content with creative and solid storylines [Ha et al, 2007]. Besides, satisfaction was found to be an antecedent of perceived enjoyment and usefulness, meaning one should improve games based on the experience of users. These conclusions will be used in to AB Music features selection.

¹⁵ These conclusions highlight the importance of social platforms in gaming, which supports the decision of including AB Music in social networks such as Facebook.

¹⁶ Features of a game with clear goals include explanations of the game background, means of providing individual and final goals during play and means of describing the character's conditions. Besides, the existence of a magic operator it is important, as well as the ability to select appropriate types of feedback and to use sound as a form of feedback during play [Choi and Kim, 2004]. These conclusions will be used in to AB Music features selection.

¹⁷ There are several levels of customization: space adaption, mission/task adaption, character adaption, game mechanics adaption, narrative adaption, music/sound adaption and player matching [Bakkes et al, 2012]. Not disregarding the simplicity associated with a casual game, some of these features will be used in AB Music.

There are several taxonomies on game player types, which started in 1996 when Richard Bartle developed the concept of gamer types for MMORPG, as a way of grouping the motivations of individuals who play for fun. Achievers, explorers, socializers and killers constitute four types of players and Bartle extensively explains the motivations and behaviors of each of them and describes how a game designer can make decisions to control the types of gamers that play his/her game¹⁸ [Bartle, 1996].

Inspired in Bartle's work, gamification¹⁹ models have emerged: a) the taxonomy of Gamification User Types²⁰ divides players in eight types: four types driven by an intrinsic motivation and another four types moved by an external motivation²¹; b) the taxonomy of Gamification Player Types²² distinguishes players according to what they look for in the gamified environment, specifying what type of mechanics, aesthetics and story these players want and how they can be translated to in-game features²³. There are also several attempts of adapting gaming literature to social and casual games. One of the most accepted models is the taxonomy of social engagement verbs²⁴, also inspired in Bartle's work: compete, explore, express and collaborate. Each of these verbs is associated with other actions that will constitute these types of games²⁵.

Zehnder and Lipscomb (2004) have studied the role of music in games across a variety of platforms and genres, concluding that "genres of video games are not only differentiated by the type of music, but also through a degree of control given to players over the game experience"²⁶ [Zehnder and Lipscomb, 2004: 11]. Furthermore, music can perform different roles in video games, such as enhance a sense of immersion, contribute to the video game narrative, act as an emotional signifier and cultivate the thematic unity of a video

¹⁸ The main conclusion this study provides is that in a game there are different types of players that search for different things, for a game designer should make decisions about a game's mechanics according to the public he or she wants to target. However, it should be considered that Bartle designed this player type theory for a very specific public (individuals that play MMORPGs for fun) and he criticizes its misuses, although he understands that, in the lack of other alternatives, his theory is used to support other types of games, such as casual games.

¹⁹ This taxonomy was created for gamification purposes. "Gamification is the use of game thinking and game mechanics in non-game contexts to engage users in solving problems." [Wikipedia. <http://en.wikipedia.org/wiki/Gamification>]

²⁰ Andrzej's Blog. <http://marczewski.me.uk/user-types/#.Ushoa9JdWSo>.

²¹ Consult the Appendix 1 for game features that directly support each user type.

²² Epic Win Blog. <http://www.epicwinblog.net/2013/05/gamification-player-types-meet-players.html>.

²³ Consult the Appendix 2 for game features that directly support each player type.

²⁴ AmyJokim. <http://amyjokim.com/2012/09/19/social-engagement-whos-playing-how-do-they-like-to-engage/>.

²⁵ Consult the Appendix 3 for a graphical representation of this model.

²⁶ This encompasses the ability to control aspects of the game's sound like the playlist, the volume-level (sound effects, music and voice/dialogue) and the presence/absence of popular or familiar music. These conclusions support one of the characteristics proposed for *AB Music*: ability to customize the playlist of the game.

game²⁷. These authors (2004) already predict an “evolving relationship between the video game and music industries” as broadband Internet access and online gaming services expand. Finally, Huiberts (2010) studied the role of audio for immersion²⁸ in computer games, having identified two functionalities that audio has in gameplay: a) optimization, since it provides useful information to the player, making the game more understandable²⁹, and b) dynamisation, because it makes the experience more intense and thrilling³⁰.

Although this rich literature helps understanding the constituents of game design, they do not provide a “secret formula”, for each of the presented studies should be carefully interpreted according to their goals and scopes³¹.

These theories and taxonomies are an important starting point for game design decisions but they are not self-sufficient – customer experience and feedback are crucial to validate theory and its application to a specific game. Although gaming literature explores motivations and behaviors that are common to all players, the translation of those conclusions into product features is not linear – there are tradeoffs to be made and there is a large room for innovation and creativity – this is why it is crucial to have the validation of consumers. Ultimately, it is the feedback of consumers that will allow progress to happen in theoretical terms.

The feedback of customers will be crucial to test and validate some theoretical aspects. The first important topic is the relevance of autonomy, mastery/competence and relatedness as motivations to play casual games³².

Secondly, the role and importance of music is also an important issue since this game component has not been analyzed in the context of casual games, which are far less complex than traditional video games. Finally,

²⁷ Music will not only be one of the features of this game, but the unifying theme of the game, thus, several characteristics of the game will be designed accordingly, such as, characters, game environment, rewards and the social experience. Besides, by allowing players to choose the music they prefer to be in their player, immersion can be potentiated.

²⁸ Immersion is defined as a sense of ‘absorption’ during game play and the consequent disconnection from the real world [Huiberts, 2010]. The positive and negative influence that audio may have on immersion during gameplay will not be extensively analyzed because Huiberts developed it for video games, which are much more complex.

²⁹ Although this role of sound seems to discourage the new product idea, the market research completes this analysis for the particular case of mobile-casual games.

³⁰ Taking this dimension of sound into consideration, and in order to potentiate the dynamization role of music, this edition of *Angry Birds* was decided to be about music, so that the points of connection between gameplay and music listening can increase and the gaming experience can improve.

³¹ A direct extrapolation from literature to game design should not happen. Richard Bartle, who criticizes the overuse of his taxonomy for purposes where it does not apply, supports this thought. [Gamedevelopment. <http://gamedevelopment.tutsplus.com/articles/bartles-taxonomy-of-player-types-and-why-it-doesnt-apply-to-everything--gamedev-4173>]

³² These psychological needs seem to be behind several studies: Yee’s motivations, Bartle player types, Self-Determination theory and Marczewski gamification player types. It is important to test, not only their importance for digital games play, but also for casual games in particular [Kilkku. <http://www.kilkku.com/blog/2013/08/bartle-player-types-yees-motivations-and-self-determination-theory/>]

simplicity is also an important characteristic of casual games that should be considered since players approach to casual games has been evolving and maximizing simplicity is not always what casual game players want [Juul, 2010].

IV. Business Description

A. Business Opportunity

The emergence of a new business concept that will merge games and music arose as a consequence of three key factors. Firstly, the evolution³³ of the games and music industries as constituents of the same sector, influenced by common trends and facing similar challenges, has approximated the future of these industries³⁴. Secondly, the role of digital music as a driver of innovation, digital engagement and hardware adoption is fuelling a change in this market³⁵. After continuously investing in a solid knowledge base that allows it to keep innovating, Nmusic was able to understand the potential of the digital music segment. As a central role of the mobile experience, music is expected to add value to mobile game play, answering to the constant search for innovation that is necessary in order to deliver or continue sustaining a successful game. Lastly, Angry Birds success, Rovio's orientation for innovation and the company's diversification strategy suggests a potential interest in the development of this new product.

According to Johnson and Jones (1957), new product development strategies are dependent on two objectives: a) degree of technological change and b) degree of market change. Angry Birds Music, despite heavily relying on content innovation, similarly to Rovio's business diversification to media and entertainment that is mainly content driven, is positioned as a new technology. This demands to acquire scientific knowledge and production skills new to the company(ies) in order to reach a strengthened market. Thus, Angry Birds Music is defined as a product extension aimed at broadening the line of products offered to present consumers through new technology. [Trott, 1998: 394]

³³ This argument will be further explored in the Business Environment section.

³⁴ In fact, games and music are the most profitable digital industries, representing 42% and 32%, respectively, of global revenues coming from digital sales of 2011 [IFPI, 2012].

³⁵ Upgraded music services and new features emerge as companies try to create an overall better user experience to attract more customers in which mobile accessibility is a premise. Since music is seen as an important asset for consumers, music services explore social media and set up channels, feeds and profiles where music is the most important topic [IFPI, 2013]

B. Nmusic and Rovio Collaboration³⁶

Nmusic, a successful online music streaming Portuguese startup³⁷ and Rovio, an entertainment Finish company mostly known for the success of the digital game Angry Birds, joined as part of the media and entertainment industry, to link these two pleasurable activities – games and music – and create a completely innovative business concept – Angry Birds Music. The companies have different contributions in the development of this business opportunity. On the one hand, Nmusic, the author of the idea, has a deep knowledge about music and mobile music platforms; besides, its experience with record labels and property rights negotiations guarantees a solid base for the development of this product. On the other hand, Rovio shows a mature know-how and accumulated experience in game design and development, for Angry Birds Music will be highly dependent on its execution of the proposed business concept. Also, Rovio's large consumer base³⁸, marketing capabilities and Angry Bird's brand strength will be crucial for the adoption and expansion of this innovative product and will give this venture a much solid structure, possibly contributing for better agreements with stakeholders (for example, record labels).

This business opportunity will change the current boundaries of the mobile gaming industry and a new market space, not yet explored, will arise. This is called a blue ocean opportunity, mainly driven by “value innovation”, in which the attractiveness of the market is close related with the lack of direct competition³⁹ [Kim and Mauborgne, 2005]. Thus, the partnership between Rovio and Nmusic benefits from first mover advantage.

C. Business Environment⁴⁰

i. Sector overview

Technology is increasingly gaining more importance as a channel for individuals' socialization. The rising mobility of digital technology that allows for “anyone-anywhere-anytime” interaction has created a very

³⁶ For more information on these companies, please consult the Appendix 4.

³⁷ According to Nmusic, musicbox accounts with more than 150 000 users.

³⁸ Angry Birds reached in March 2013 more than 1.7 billion downloads. [AWS Case Study: Rovio. <http://aws.amazon.com/pt/solutions/case-studies/rovio/>]

³⁹ As explored in the work of Filipa Conduto, AB Music will face the indirect competition from current mobile-casual games (none of them offering access to music) and even more indirect competition from streaming services.

⁴⁰ The business environment of these industries will not be extensively explored in this work project since it belongs to the scope of Filipa's work. A brief market potential assessment can be found in Appendix 5.

important premise in the IT sector - connected consumers. Furthermore, digital convergence⁴¹ has been expanding in the form of converged devices, converged applications and converged networks, creating significant consequences for the sector: a) technology-driven, instead of content-driven⁴², b) with a larger number of consumers that perceive products and services with an increased value, and c) more competitive due to an integrative convergence⁴³. At the same time, the downturn of the economy that leaves consumers with a lower purchasing power is mitigated by more competitive prices in this sector.

Companies in the entertainment and media sector are part of a much larger conglomerate of industries, mainly fuelled by digital innovation, so they are obliged to rethink their strategies in order to operate in the sector. Searching to keep pace with these major changes and engage consumers, game companies will need to resort on multi-platform analytics to generate data about consumers' behaviors, expectations and buying intentions, and they can then experiment and apply innovation to content itself and embrace new business models, adopting bundling approaches and collaborative partnerships. Lastly, the companies have a great challenge in hands - aligning with consumers' demand throughout the combination of bundles of content, time, platform and price [PWC, 2013]. Similarly to what has already happened in the gaming industry, where players started to vertically integrate⁴⁴, it is expected that the new business opportunity between Nmusic and Rovio triggers a number of alliances and partnerships, not only between players of the music and video games industries, but also between numerous technological companies from different sectors. The 'blurring boundaries between actors [...] linked to the wider availability of easy to use tools for content creation and enhanced technological capabilities for transmission of digital content?' [Mateos-Garcia et al, 2008: 61] will contribute to a dynamic scenario, characterized by vertical integration, technological convergence and innovation.

⁴¹ Digital convergence refers to the agglomeration of Information Technologies, Telecommunication, Consumer Electronics and Entertainment industries. [Wikipedia, http://en.wikipedia.org/wiki/Digital_convergence]

⁴² New products and services will emerge, not driven by demand on a specific content, but by innovative technical abilities, which reinforces the importance of innovation for these industries [Mateos-Garcia, et al 2008].

⁴³ The integration of what once were features of distinctive goods into new products and services allows for more competitive prices.

⁴⁴ Zynga is a good example of vertical integration: the games company created its own platform as a way to reduce the influence of Facebook in its cost structure [Roland Berger, 2012].

ii. Market trends

Similar trends shape the future of the games and music marketplace. Firstly, the existence of more screens where to play, fueled by the cloud technology and the evolution of social networks, attracts more players, leading to more times spent on gaming and, consequently, more game revenues [Newzoo, 2013]. Accordingly, mobility will be an important demand from players. Similarly, music consumers want to have access to music “anywhere, any way” [Siemer & Associates, 2013], for mobile adoption will increase and accessibility will be crucial, as well as interactivity among several devices⁴⁵. Another important trend is that players are getting used to the idea of free games, they do not want to commit (financially) before they experience the game thus, being able to continuously engage customers is vital to assure game monetization [Newzoo, 2013]. Also, streaming music platforms that serve consumers with innovative players and features struggle to find how to extract value from that. Gaming and music streaming companies have to adopt more creative and dynamic business models that allow them to extract value from the vast consumer base using their products/services⁴⁶ [Newzoo, 2013].

Other industry trend derives from the fact that consumers are the ones deciding where they spend money within the game environment, thus pressuring publishers to continuously add new game content. Games are evolving from a product to a service and, likewise, analytics and player understanding are crucial to serve consumers [Newzoo, 2013]. In parallel, music users face numerous choices, pushing music services to find new ways of helping customers to found the music they really want. Once again, the importance of qualitative and quantitative data about players is very important in order to improve recommendation mechanisms⁴⁷.

The global presence of the video games industry means that companies can launch their game anywhere, the competition is global and this should become part of any games company’s strategy. Furthermore, emerging markets will fuel growth in the future, for reaching these markets should also be a priority for the companies in this industry [Newzoo, 2013].

⁴⁵ Musicthinktank. <http://www.musicthinktank.com/blog/4-emerging-trends-in-social-media-how-theyll-impact-the-musi.html>

⁴⁶ Digitalmusicrends. <http://digitalmusicrends.com/>

⁴⁷ Digitalmusicrends. <http://digitalmusicrends.com/>

iii. Survey

In order to test the potential of this new product, a market research was conducted through an online survey during three weeks, answered by 218 respondents. The following table summarizes the main conclusions⁴⁸:

SURVEY INSIGHTS	
• Respondents listen to music with more frequency than play games.	• 46 % consider the soundtrack of a digital game important for game performance .
• Music is among respondents' top interest activities.	• Majority of players either turns down the volume of the game's music, turns it off or switches to his/her personal player.
• " Entertaining " is the word that better describes game and music.	• Music/soundtrack is considered the 5th more important feature in a game.
• Most important role of music in games is the dynamization of the gameplay.	• 56% of respondents value the possibility of selecting the soundtrack of a mobile game.

Table 1: *Survey Insights*

The results of the survey not only reinforce the potential of the mobile-casual games' segment, represented in this context by Angry Birds, but also, the potential of an association of the most growing industries in the digital world. The perceived value for the end consumer of a product that mixes games and music is higher than if each of these entertainments were presented alone. Moreover, the current utilization gamers give to the soundtrack of mobile-casual games shows that the music dimension in this type of games can be much better explored. Also, since curiosity is one of the drivers that lead players to try new game versions, Angry Birds Music can take advantage from being highly innovative, thus promising that Angry Birds fans (263 million players active monthly⁴⁹) are potential clients of this new version.

As a complement, a second online survey, answered by 36 casual game players, was conducted with the main purpose of further validating and testing the existent gaming literature and collecting feedback about the proposed features of the new game⁵⁰. Two main conclusions can be taken from both surveys. Firstly, respondents demonstrated having a strong need for competence⁵¹ and autonomy⁵². The importance of

⁴⁸ For an in depth analysis of the surveys, please consult the Appendices 6 and 7.

⁴⁹ Expandedramblings. <http://expandedramblings.com/index.php/how-many-people-play-angry-birds-infographic/#sthash.QDfn4UjD.1fUzCf1i.dpbs>.

⁵⁰ The results of this survey will be analyzed and applied in the "Market Specifics" section.

⁵¹ Mastery of controls, a sense of competence, achievement and progression, the right level of difficulty and relevant feedback were considered important for the gameplay.

⁵² Discovery, autonomy, role-playing and customization were considered important for the gameplay. However, autonomy in casual games is restricted for this type of games prioritizes simplicity.

relatedness is not linear; whereas competition seems to attract players, other components⁵³ are not considered to be vital, suggesting that being challenged by other players is more important than the relational aspect. Secondly, soundtracks of casual games do not seem to have an important role in gameplay. Thus, game sound in casual gaming should be further explored by literature; nevertheless, it is possible to conclude that there is room for improvement and innovation regarding the sound element of a casual game.

V. Business Idea

Once the business opportunity that justifies the creation of Angry Birds Music was studied and proved, it is necessary to concretize it into a product. After collecting information about consumers, analyzing current offers from competitors, brainstorming internally and deeply studying the products portfolio of both companies, it was possible to generate several ideas that will materialize this opportunity into a highly innovative mobile-casual game business concept.

A. Market Specifics

i. Statement of Needs and Market Needs

The presented studies about mobile-casual games suggested game features associated to specific customers' needs that, ultimately, contribute to the success of a game. As previously referred, the second survey was performed in order to test for the relevance of those features, and the following table summarizes the opinion of 36 gamers. To each customer statement corresponds at least one characteristic of AB Music that satisfies that need, further associated with a specific game element⁵⁴.

Table 2: *Customers' Statements and Associated needs*

Customer Statement	Need	Element	Supportive literature
"When I think of gaming, I think of winning."	AB Music defies you with attainable challenges. There are great and diversified chances of winning.	Mechanics	Competence need (Rigby, 2006) Mastery (Marczewski, 2013) Achievement (Manrique, 2013) Compete (Jo Kim, 2012)
"Mobile-casual games are my 'killing-time' fun."	AB Music allows you to play in small breaks because it is designed for short engagement loops.	Mechanics	Interruptibility (Juul, 2010)
"I want a game easy to master."	AB Music is user friendly.	Mechanics	Usability (Juul, 2010) Ease of use (Zhou, 2012) Mastery of controls (Rigby, 2006)

⁵³ Socialization, collaboration, teamwork, relationship and social status had a low score comparing with other players' needs.

⁵⁴ Every game is composed by mechanics (the rules and procedures of the game), story (the sequence of events revealed during play), aesthetics (how a game "looks, sounds, smells, tastes and feels") and technology (materials and interactions that make a game possible) [Schell, 2008]. For a more detailed explanation about these elements, please consult the Appendix 8.

"I will only play a game that is visually attractive."	AB Music has juicy and fresh interfaces.	Aesthetics	Juiciness (Juul, 2010) Positive emotions & Pleasure (Manrique, 2013)
"Gaming is more than pure mechanics, I like to be involved in a story."	AB Music has a solid story sustaining gameplay.	Story	Enjoyment (Ha et al, 2007) Fiction (Juul, 2010)
"I would not like to be overwhelmed with information."	AB Music provides you limited HUDs ⁵⁵ .	Aesthetics	Positive emotions & Pleasure (Manrique, 2013)
"I do not want to financially commit to a game before trying it."	AB Music can be accessed freely. The decision of having access to more content is made by the player, which in this case, should make a payment.	Price	Newzoo (2013)
"I use more than one device to play and I would like they could synchronize."	AB Music can be played on your smartphone, computer or tablet.	Technology	Ease of use (Zhou, 2012)
"Often, the sound of casual games is annoying and I turn it off."	AB Music allows you to select the game music according to your taste.	Aesthetics	Personalization (Bakkes et al, 2012) Playlist customization (Zehnder and Lipscomb, 2004)
"I fear that music disconnected from the gameplay can create non-contextualizing effects."	AB Music adjusts the game environment to the music genre you are listening to.	Aesthetics	Music as the thematic unity of a game (Zehnder and Lipscomb, 2004) Role of music in games (Huiberts, 2010)
"Installation should not be a problem."	AB Music can be accessed through an application, websites or social networks.	Technology	
"I do not want a game that it is too obvious."	AB Music will surprise you with new quests and challenges.	Mechanics	Mastery (Marczewski, 2013) Achievement (Manrique, 2013) Compete (Jo Kim, 2012)
"Repeating levels bores me."	AB Music lets you assess to the last level you achieved in the game.	Mechanics	Competence (Rigby, 2006) Mastery (Marczewski, 2013) Achievement (Manrique, 2013)
"I enjoy having a sense of progression."	AB Music is structured in levels, allowing you to have quick success and win prizes.	Mechanics	Competence (Rigby, 2006) Mastery (Marczewski, 2013) Achievement (Manrique, 2013) Compete (Jo Kim, 2012)
"I hate it when I don't understand why I failed in the game."	AB Music provides multi-level feedback, enabling you to improve your performance in the game.	Mechanics	Competence (Rigby, 2006) Goals (Choi and Kim, 2004) Mastery (Marczewski, 2013)
"I get really annoyed when there is lockable content in the game that hinders my progress."	AB Music provides you with options to unlock protected content.	Mechanics	Autonomy (Marczewski, 2013)
"When I start playing a game I like to understand the story background."	AB Music shows you short videos that quickly explain the game narrative.	Story	Goals (Choi and Kim, 2004) Positive emotions & Pleasure (Manrique, 2013)
"I feel over-controlled with too extensive instructions."	AB Music has clear and simple tutorials that explains you how to play the game.	Mechanics	Ease of use (Zhou, 2012) Positive emotions & Pleasure (Manrique, 2013)
"I like to try out new roles and personalities with my characters."	AB Music lets you customize your characters.	Aesthetics	Autonomy (Rigby, 2006) Autonomy (Marczewski, 2013) Meaning (Manrique, 2013) Express (Jo Kim, 2012)
"When I lose to someone, I immediately want to play again in an attempt to beat him/her."	AB Music compares your performance with your friends' performance and allows you to repeatedly try to beat them.	Mechanics and Aesthetics	Compete (Jo Kim, 2012) Relatedness (Rigby, 2006) Mastery (Marczewski, 2013) Meaning and relatedness (Manrique, 2013)

⁵⁵ Head-up display (HUD) "is the method by which information is visually relayed to the player as part of a game's user interface". [Wikipedia. [http://en.wikipedia.org/wiki/HUD_\(video_gaming\)](http://en.wikipedia.org/wiki/HUD_(video_gaming))]

"It's important to me to achieve goals with as little help from other people as possible."	In AB Music you have all the conditions to win without having to buy power-ups or ask other players' for help.	Mechanics	Competence (Rigby, 2006)
"I would like to have as much freedom as possible in music selection."	AB Music allows you to select the music you want through several filters.	Mechanics	Autonomy (Rigby, 2006) Personalization (Bakkes et al, 2012) Playlist customization (Zehnder and Lipscomb, 2004)
"I want to be able to listen to the music of the game in other contexts."	AB Music has an offline mode, in which you can assess to the music saved during the game.	Technology	Usefulness (Ha et al, 2007) Achievement (Manrique, 2013)
"I would like to be notified about new tracks."	AB Music notifies you about new tracks, artists and albums available in the game.	Mechanics and technology	Explore (Jo Kim, 2012) Achievement (Manrique, 2013)
"I need a magic operator when I am not able to complete a certain task/level."	The Mighty Eagle helps you.	Mechanics	Operator (Choi and Kim, 2004)
"It would be nice to socialize with other players through music."	AB Music allows you to see the music other players are listening and they can see what you are listening.	Technology	Meaning and relatedness (Manrique 2013) Relatedness (Rigby 2006) Relatedness (Marczewski 2013)
"I think that music could be a very attractive reward for a game."	AB Music offers music as a reward and there is the possibility of selecting which track/album the player wants to win.	Mechanics	Autonomy (Rigby 2006) Usefulness (Ha et al. 2007) Achievement (Manrique 2013) Explore (Jo Kim 2012) Role of music in games (Sander Huiberts 2010)

ii. Hierarchy of Needs⁵⁶

The characteristics listed above have different levels of importance for consumers, for it is necessary to prioritize them, which will consequentially allow for a better screening of product ideas. This table⁵⁷ organizes the different types of needs (being "1" the most important) and includes the game features that will be manipulated in order to create AB Music in accordance to customers' "wants".

Table 3: Needs hierarchy

Rank	Need description
1	Affordability
2	Ease of use <ul style="list-style-type: none"> • Smaller player • Instruction tutorials
3	Autonomy <ul style="list-style-type: none"> • Unlockable content (music)
4	Offline mode
5	Role playing <ul style="list-style-type: none"> • Music characters
6	Competition <ul style="list-style-type: none"> • Music tournaments
7	Customization <ul style="list-style-type: none"> • Music environments • Playlist customization
8	Rewards <ul style="list-style-type: none"> • Music • Extra-challenges
9	Social interaction (music experience) <ul style="list-style-type: none"> • Visible status (music playing) • Opportunities for collaboration

⁵⁶ Please consult Appendix 9 for the SPSS analysis that allowed defining the presented hierarchy.

⁵⁷ This table is a summary of all the needs that should be considered for an Angry Birds game. Since it is not the aim of this project to alter the core gameplay and mechanics of Angry Birds, some product characteristics did not need to be considered to change. The complete hierarchy table can be consulted in the Appendix 10.

VI. Business concept

After the validation of the business opportunity and the generation of ideas, reinforced by the feedback of consumers, there is the challenge of transforming those ideas into potential product concepts and design⁵⁸.

A. Concept Design⁵⁹

Simple Player

The first suggestion is to add a player disconnected from the gameplay, which can be adapted to any Angry Birds game. Based on a freemium⁶⁰ business model, players can have access to a free trial after which they can have access to the complete game. Also, players can buy packs of songs in the online shop that are automatically added to the music player in the game. Three different concepts were developed for this idea:

Table 4: *Concepts 1-3*




	Concept 1	Concept 2	Concept 3
Common features	<ul style="list-style-type: none"> All game sounds are disabled when the player is active Smaller player (during game play) Instruction tutorials 		
Specific features	<ul style="list-style-type: none"> Music choice: playlist of moods 	<ul style="list-style-type: none"> Music choice: multiple filters (tracks, playlists, artists and albums) 	<ul style="list-style-type: none"> Music choice: genres AB characters are representative of a music genre
			

Figure 1: *Concept 1*

Figure 2: *Concept 2*

Figure 3: *Concept 3*

Music genres

A more elaborated idea is to set music as central to the game and extensively adapt game elements to represent that theme⁶¹. Gamers will have access to a list of music genres that substitute the current “episodes” of the classic AB game. This will be also a freemium product, with a free trial and online packs of songs; besides, it will also have the possibility of subscribing to a premium version, in which the music content is much wider.

⁵⁸ Crawford (1997) identifies three essential inputs for the definition of a product concept: form (physical product), technology (at the base of the innovation) and need (benefits gained by the customer) [Trott, 1998: 526]

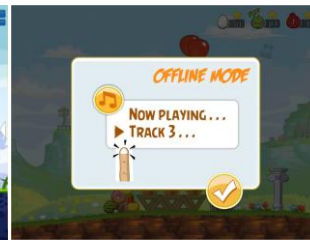
⁵⁹ The estimation of the game’s price is carefully done by Cláudia Correia.

⁶⁰ “Freemium means the vast majority of your users use your product for free and a minority pays.” [Businessinsider. <http://www.businessinsider.com/what-is-the-freemium-business-model-2011-4?op=1#ixzz2pYV8PAY6>]

⁶¹ Characters are a personification of the music genre (e.g. birds and pigs can resemble known artists), the game environment is representative of the genre (e.g. frames of successful video clips and albums), power-ups and feedback are adapted to the music theme.

Table 5: *Concepts 4-6*

	Concept 4	Concept 5	Concept 6
Common features	<ul style="list-style-type: none"> • Smaller player (during game play) • Instruction tutorials • Music choice: multiple filters (tracks, playlists, artists and albums) • Online-offline mobility • Visible status (social networks) • Avatar customization (items linked to music) • Offline mode 		
Specific features	<ul style="list-style-type: none"> • Music-player composition depends on the game version (free, normal or premium) and music-packs bought • Direct access to the music in the player after gender selection 	<ul style="list-style-type: none"> • Music-player composition depends on performance: for each level unlocked, the gamer can choose a song to add to the player • Surprise factor: some levels lead to a larger pack of songs • Music-boxes: when hidden music-boxes are hit, the gamer is transported to a special challenge • Competition: online tournaments for the special launch of a new album • Real prizes⁶²: worldwide intense competitions for tickets (life concerts and AB adventure parks) 	<ul style="list-style-type: none"> • Music-player composition depends on the game version (free, normal or premium) • Direct access to the music in the player after gender selection • Offline mode: for each level unlocked, the gamer can choose a song to add to the offline mode

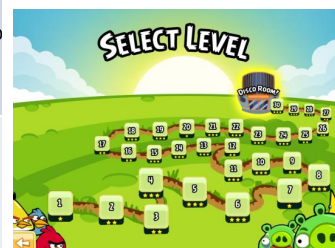
Figure 4: *Concept 4*Figure 5: *Concept 5*Figure 6: *Concept 6*

Music map and disco rooms

The last suggestion, initially purposed by Nmusic is to organize levels are organized within a map in which, similarly to the previous group of concepts, the game environment, characters, power-ups and feedback mechanisms are representative of the music theme. Besides a different organization, the innovation of this concept is to allow players to have a “DJ’ing” experience.

Table 6: *Concept 7*

	Concept 7
General features	<ul style="list-style-type: none"> • Smaller player (during game play) • Instruction tutorials • Music choice: multiple filters (tracks, playlists, artists and albums) • Online-offline mobility • Visible status (social networks) • Avatar customization (items linked to music) • Offline mode
Specific features	<ul style="list-style-type: none"> • Music-player composition depends on performance: for each level unlocked, the gamer can choose a song to add to the player • Disco rooms: DJ role-playing • Real prizes: worldwide competitions for tickets (life concerts and AB parks)

Figure 7: *Concept 7*

⁶² Venturebeat. <http://venturebeat.com/2013/10/02/p4rc-gains-ground-with-rewards-for-mobile-gamers/>

B. Main Criteria and Concept Selection

The Concept Selection matrix summarizes the main criteria according to which the proposed concepts will be evaluated. The weight of each criterion was automatically generated by an excel template⁶³. Finally, the concept that scored a higher evaluation – Concept 6⁶⁴ - is presented⁶⁵.

Table 7: Concept Matrix Selection

Criteria	Weight	Associated features
Price	31,3%	
User friendliness	25%	Smaller player
		Instruction tutorials
		Great availability of songs
		Mobility
		Offline mode
Fun / Innovation	18,8%	New quests and challenges
		Thematic experience
		• Rewards
		• Story
		• Characters
		• Environment
Autonomy / Customization	12,5%	• Feedback
		"DJ'ing"
		Customized playlist
		Customized avatars
Sociability	12,5%	Customized rewards (music)
		Multiplayer tournaments
		Visible playlist and status
		Shared activity
		Power-up / music sharing

Table 8: Concept 6 Evaluation

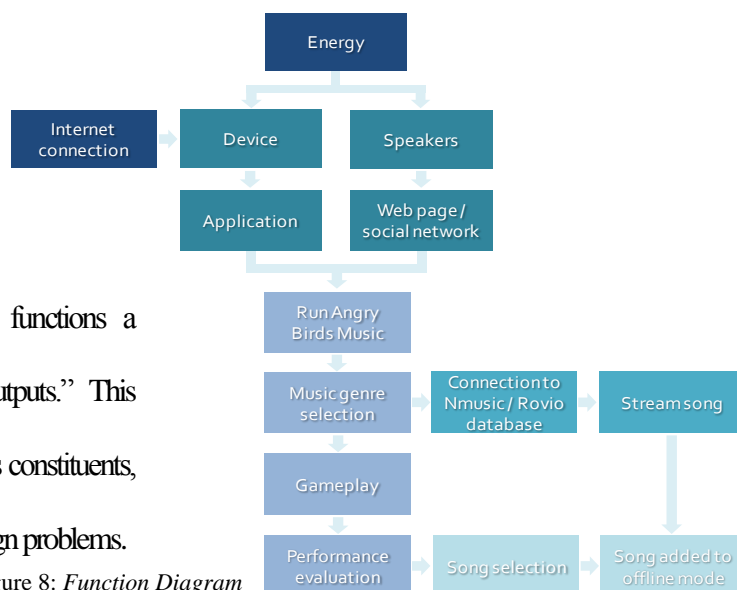
Concept 6		
Criteria	Valuation	
Price	4	1,252
User friendliness	4,75	1,1875
Fun / Innovation	5	0,94
Autonomy / Customization	4	0,5
Sociability	4	0,5
Total		4,3795

C. Function Diagram

A Function Structure Diagram⁶⁶ is

“a graphical representation of the functions a product performs on its inputs and outputs.” This tool allows understanding a product’s constituents, which is crucial to solve potential design problems.

Figure 8: Function Diagram



⁶³ The House of Quality excel template automatically generates a weight for each of the criteria, according to its relevance.

⁶⁴ Please consult the Graphical representation of this concept in the Annex – Final Concept Illustration (p.26).

⁶⁵ In order to consult the evaluation of other concepts, please consult the Appendix 11.

⁶⁶ Npdbook. <http://npdbook.com/stages-of-the-design-process/function-structure-diagram/>

D. House of Quality (HoQ), Final Specifications

The new product concept was analyzed through the *HoQ* tool as a way to define which product characteristics can be improved according to the “voice of customers”. After the identification of customer and technical requirements, an interrelationship matrix was constructed and this allowed understanding how each technical requirement affects customer wants. Also, the relationships among technical properties were evaluated in order to identify which features conflict and which features potentiate others. According to customers’ feedback received, target values for each design requirement were established, which will constitute concrete goals for the game’s development phase. Alongside, the current AB games were compared with AB Music, as a way to perceive the value added by the new game. *HoQ* allows weighting technical requirements according to their importance, which ultimately leads to better decisions and coordination between the stages of a new product development and allows assuring that product features are aligned with customers’ needs and requirements.

There were found minimal negative relationships between the “availability of songs” and the “smaller player”. Besides these technical specifications, none of the listed requirements seems to be damaged by the existence of the other requirements. However it is important to take into account that the construction of this *HoQ* was made at an early phase of the development path. Most likely, some of these characteristics have an impact on general requirements of any digital game, namely, the cost of production, and will require tradeoffs.

Undoubtedly, the availability of songs is the most critical technical requirement, both due to its relative importance for the product’s value and the difficulty of making available a wide selection of songs. Secondly, the existence of an offline mode and the possibility of transferring songs to it are also crucial, but fairly easier to accomplish. Also, real prizes, connectivity and a customized playlist are valuable features for this product. On the one hand, real prizes greatly increase the perceived usefulness of engaging in the game, as well as customized playlists that allow the player to decide which songs should be added to his/her player. On the other hand, connectivity is a vital requirement that enables all the mentioned features. Finally, all customers’ wants are better served with the new game that, despite being more expensive, offers a better price-value relationship.

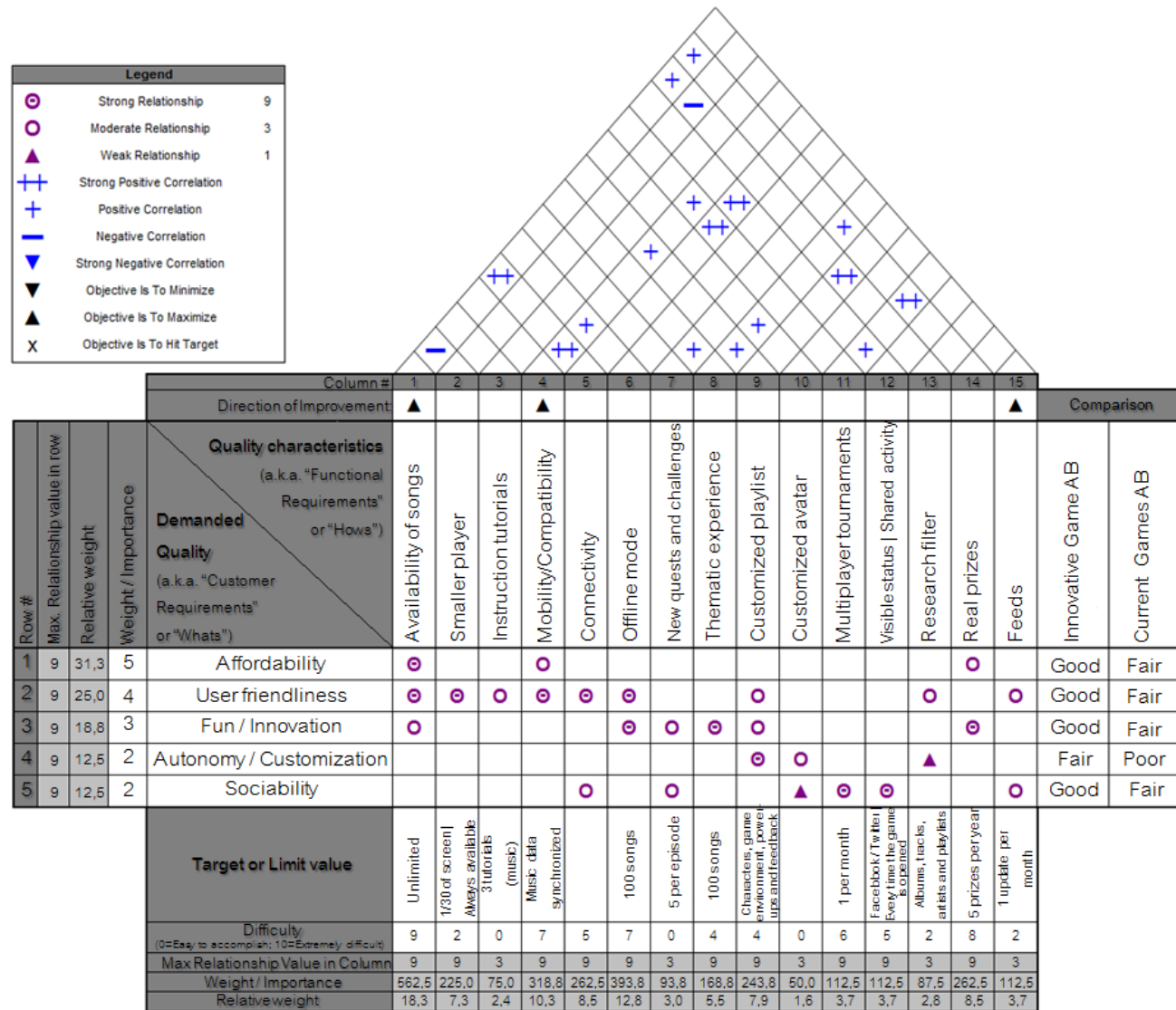


Figure 9: House of Quality

VII. Conclusions, Risks and Recommendations

A. Conclusions

After an extensive analysis, the final business concept of AB Music was defined according to the existent literature about gaming, information about players' needs and wants collected through the online surveys and main conclusions of the House of Quality. Besides, the feedback from Nmusic throughout the development of this project had an important weight on decision making.

The selection of game features is closely related with the most important needs identified in literature: clear rules enabled by short tutorials, a division by levels, the scheme of rewards, extra challenges and online tournaments support the need for competence; the wide selection of songs, multiple research filters, the easiness of unlocking content and the possibility of creating playlists and avatars allow customers to experience a sense of autonomy and to customize several elements of the game according to their taste; a visible status, multiplayer interactions and shared activity enable players to relate with each other with a degree of personal exposure validated by respondents in the market research. Since casual games' players value innovation and fun, and search for positive emotions and pleasure, this game resorts a lot on creative content, such as music, a highly characterized game environment and characters. In order to take advantage from the dynamizing and immersing roles of music, this game brings close the music theme in several dimensions in such a way that music is felt like an integrative element. Finally, the elements that increase the perceived usefulness of the game and, consequently, increase the adoption process by players are: a) the access of a great variety of songs during gameplay, b) the existence of an offline mode that allows to have access to songs awarded in the game in other occasions and, c) real prizes, such as concert and Angry Birds adventure parks tickets, that allow transitioning from the game to the real world. The house of quality reinforced the importance of concretizing these three aspects with a maximum quality, for they have the highest impact in the game success.

Some characteristics of Angry Birds Music reinforce the potential that this game can have; on the one hand, the utility of the game is supported by interaction, which means players have an incentive to share the product with others, and on the other hand, the game incentivizes a strong retention since players are motivated to achieve

more and more in order to be compensated with real prizes. In fact, survey respondents stated that the choice of new games is mainly driven by friends' advice. These two characteristics of Angry Birds Music reinforce that a large consumer base will adopt this product. Yet, in order to potentiate real prizes, this is, the music experience within and off the game, Nmuisc and Rovio have an important challenge to overcome in order to develop a software that integrates a music database and the current game structure of Angry Birds.

B. Limitations

In order to understand the usage of this project, some limitations have to be considered. Firstly, there is a lack of specific literature on casual game design and casual players' motivations to support the design decisions, for market research has taken an even more important role. However, the sample used is not as diversified as it should be, both in terms of nationality and age. Secondly, it would have been important to have the feedback of players regarding the product concepts and test the prototypes with them. However, for confidentiality reasons, it was not possible to do so. Nevertheless, the feedback from the content and product managers of Nmusic was incorporated in the concepts development and selection processes. In the next section will be proposed crucial actions to address these limitations.

C. Recommendations

This work project considers a very initial phase of the new product development. In order to concretize the business opportunity it is necessary to develop the product according to the proposed implementation plan⁶⁷:

1. Team definition: It will be necessary to define a team with the right competences to develop and launch AB Music. Accordingly, it is important to form a multi task force that includes Rovio and Nmusic in order to take advantage from each company's strengths. Since the companies have different organizational cultures, some coordination and communication problems may arise, for it is important to prepare well the partnership and align both companies on possible divergence points.

2. Expanded market research: The market research should be expanded in order to capture the feedback of a more representative customer base. This will not only allow validating the market potential but, most

⁶⁷ The work project of Cláudia Correia includes the complete implementation plan associated with this business opportunity.

importantly, it will support major design decisions. Moreover, an extensive research about musical tastes by geographical region should be done in order to adapt the musical content to local tastes. It is also worth noticing that a target segment should not be defined since this industries' merge will most likely generate new segments, difficult to predict at this stage.

3. Product concept adaptation and design: The information collected from customers will allow adapting the product concept according to their feedback. In spite of the work developed in this project, in which were not considered other options but a "typical" Angry Birds game, major changes to the current product concept can be an alternative. In fact, an effort was made to not deviate from the gameplay concept of Angry Birds, mostly because this project was not accompanied by a savvy game designer and it was not possible to work close with Rovio Entertainment Ltd., but only with Nmusic. Nevertheless, the development process of AB Music will be more complete if it is considered an expansion of the range of possibilities for the product's gameplay style, similarly to what has been done with Angry Birds GO!⁶⁸ for example, developing a streaming service with the brand Angry Birds or a karaoke game for Angry Birds. Besides, it is important to guarantee the necessary resources for the development of this game, whose success is highly dependent on technology and access to music content. There is the risk of not having the necessary resources to deliver such a product, which will imply more time and financial capital to develop the right technology, a strong business model to support the high expenses in music and effective management of strategic partnerships.

4. Focus groups and product testing: After the selection of the new product concept, a prototype should be made and tested by consumers in order to optimize the final decision. Since this process will generate different opinions from players, it will be a challenge to correctly interpret and incorporate their feedback in order to generate improvements on the new concept. Moreover, although it is important to prioritize the understanding of the consumer, it is also necessary to balance customers' needs and opinions with the innovation factor that, in an early phase, might not be completely understood by consumers.

⁶⁸ Angry Birds GO! was launched in the 11th of December of 2013 with a different format from others Angry Birds' games. This new game is based on a car race that involves several traditional characters of Angry Birds.

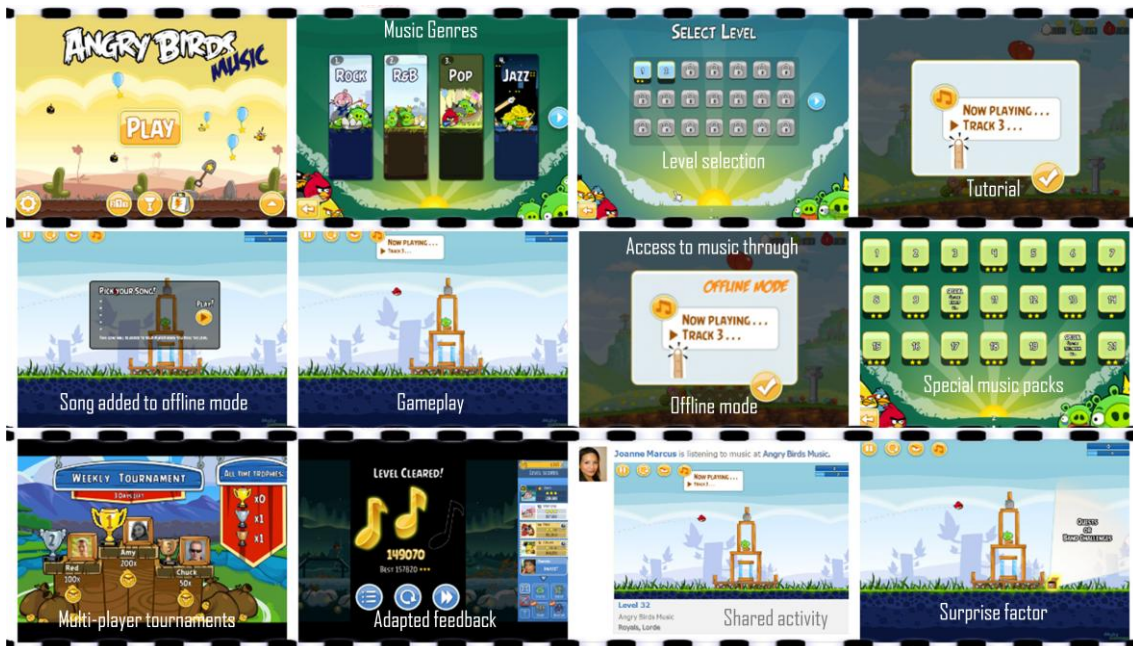
5. Pilot: Taking into account the innovativeness of this industry-changing product, AB Music should have its first launch under restricted conditions and a pilot phase should be considered. As a highly innovative product there is the risk of not being well accepted in an early stage, for all the measures that can facilitate the integration of AB Music are necessary. Furthermore, a pilot will allow reaching a larger customer base that, for financial reasons, it is not so easy to reach in a product-testing phase. However, there are some risks associated with this new product. As a pioneering project, it will most probably lead to a change in the industries' boundaries, encouraging new associations of industry's players. Consequently, there will be an impact on the design of new products, led by vertical integration and technological convergence. One possibility is that modular design will shape IT products of the entertainment and media industry and alike. As first movers, Nmusic and Rovio will face the risks and major changes that this new opportunity may bring.

6. Players' feedback: Equally in the pilot phase and the following launch stages⁶⁹ it is important to provide effective customer relationship management mechanisms, both as a way of making customers satisfied and receiving important feedback to guarantee the success of the game.

7. Adapt product to global reach: After the pilot, the market potential of the product will be tested and the game might also suffer another revision, so it can finally be launched. It may occur a lack of alignment between customers' needs and the product content, mainly because of distinct cultures. Music tastes vary across regions, so in order to please future players this content has to be carefully study, revised and adapted. Secondly, a lack of communication or a lack of effective communication may threat the success of this product as it is as novelty, "strange" to consumers. It is crucial that potential customers are well informed of the product and convinced of its value proposition.

⁶⁹ As explained in the work of Filipa Conduto, the first stage launch of AB Music will be made in Europe and North America and the second stage will be in Asia Pacific.

VIII. Annex– Final Concept Illustration



IX. Bibliographic References

- Bakkes, Sander, C. Tien Tan and Yusuf Pisan.** 2012. "Personalised Gaming: A Motivation and Overview of Literature." *Proceedings of The 8th Australasian Conference on Interactive Entertainment: Playing the System*, Article No. 4.
- Bartle, Richard.** 1996. "Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs." *The Journal of Virtual Environments*, 1(1) and at <http://www.mud.co.uk/richard/hcds.htm>.
- Boston, Barbaros.** 2009. "Player motivations: a psychological perspective." *Computers in Entertainment*, 7(2).
- Casual Games Association. 2007. Casual Games Market Report.
- Casual Games Association. 2012. Casual Games Sector Report.
- Choi, Dongseong and Jinwoo Kim.** 2004. "Why people continue to play online games: In search of critical design factors to increase customer loyalty to online contents." *CyberPsychology & Behavior*, 7(1): 11-24.
- Dempsey, John, Karen Rasmussen and Barbara Lucassen.** 1996. "The Institutional Gaming Literature: Implications and 99 sources." University of South Alabama Technical Report 96-1.
- Ha, Imsook, Youngseog Yoon and Munkee Choi.** 2007. "Determinants of adoption of mobile games under mobile broadband wireless access environment." *Information & Management*, 44: 276–286
- Hauser, John, and Don Clausing.** 1988. "House of Quality." *Harvard Business Review*, May-June, 63-73.
- Hong, B.** 2010. "Catching Up with Video Games". *Music Business Journal*, December 10. <http://www.thembj.org/2010/12/catching-up-with-video-games/>.
- Hsu, Chin-Lung and Hsi-Peng Lu.** 2007. "Consumer behavior in online game communities: A motivational factor perspective." *Computers in Human Behavior*, 23: 1642–1659
- Huiberts, Sander.** 2010. "Captivating Sound: The role of audio for immersion in computer games." PhD diss. Utrecht School of the Arts.
- IFPI. 2012. Digital Music Report: Expanding choice: Going Global.

IFPI. 2013. Digital Music Report: Engine of a Digital World.

Juul, Jesper. 2010. *A Casual Revolution*. Cambridge: The MIT Press.

Klara, Robert. 2011. "Cute, ridiculous, and addicting, the Angry Birds videogame has made digital history. Psst, hey kid, wanna buy a stuffed toy, too?" *Adweek*, 52(21): 32-33. May 2011.

Kim, W.Chan and Renée Mauborgne. 2005. "Creating Blue Oceans" In *Blue Ocean Strategy*, 1st ed. Massachusetts: Harvard Business School Press.

Mateos-Garcia, J., A. Geuna, and W.E. Steinmueller. 2008. "State of the art of the European creative content industry and market and national/industrial initiatives," In: F. Abadie, I. Maghiros, and C. Pascu (editors). *The future evolution of the creative content industries: Three discussion papers*, at <http://ftp.jrc.es/EURdoc/JRC47964.pdf>.

Music Box Website. 2013. <http://musicbox.sapo.pt/>

Newzoo. 2013. Mobile Games: Placing Smartphone and Tablet Gaming in Perspective of the Total Games Market.

Newzoo. 2013. The Global Games Market: Key Facts & Insights on The Global Games Market 2012-2016.

Nmusic Website. 2013. <http://www.nmusic.pt/index.php>

Park, Eunil, Baek, Seoin, Jay Ohm and Hyun Joon Chang. 2013. "Determinants of player acceptance of mobile social network games: An application of extended technology acceptance model." *Telematics and Informatics*, 31(1): 3-15.

PWC. 2013. Global Entertainment and Media Outlook 2013-2017. <http://www.pwc.com/gx/en/global-entertainment-media-outlook/index.jhtml>

Roland Berger. 2012. Casual Games are for Everyone and Everywhere.

Ryan, R. M., C. Scott Rigby, and Andrew Przybylski. 2006. "The motivational pull of video games: A self-determination theory approach." *Motivation and Emotion*, 30(4): 347-364.

Rigby, Scott, and Richard Ryan. 2007. "The Player Experience of Need Satisfaction (PENS). An applied model and methodology for understanding key components of the player experience."

Rovio Entertainment Ltd. Website. 2013. <http://www.rovio.com/>

Schell, Jesse. 2008. *The Art of Game Design: A book of lenses*. Burlington: Morgan Kaufmann Publishers.

Siemer&Associates. 2013. Digital Music Industry Report, Santa Monica.

Trott, Paul. 1998. *Innovation Management and New Product Development*. 4th ed. Harlow: Pearson Education Limited.

Yee, Nick. 2007. "Motivations of Play in Online Games." *Journal of CyberPsychology and Behavior*, 9, 772-775.

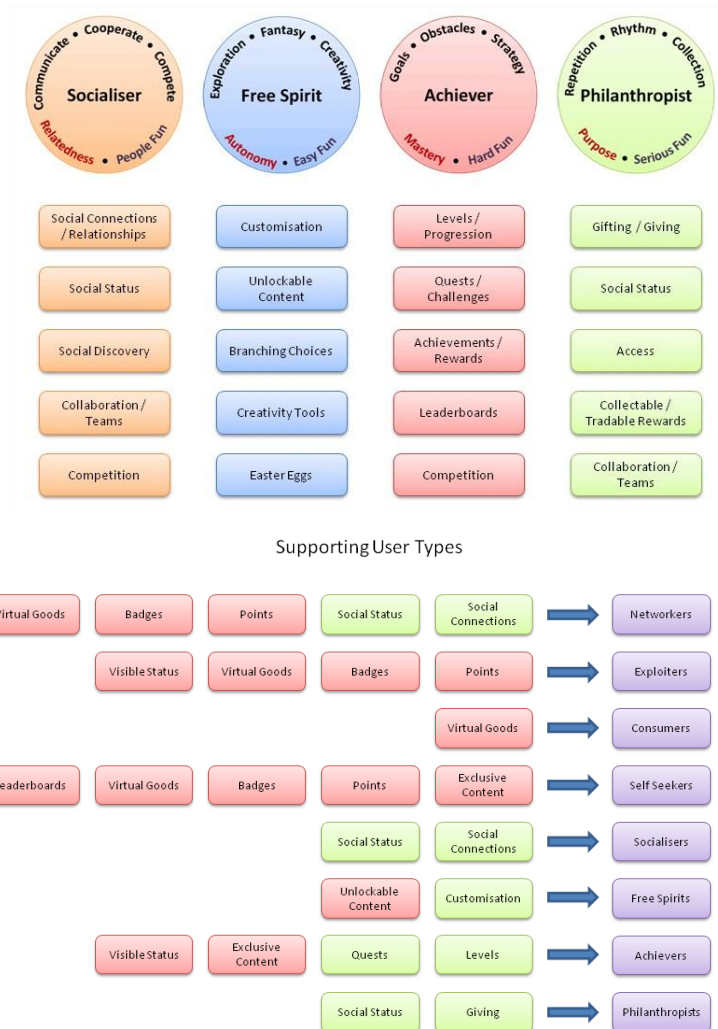
Zehnder, Sean M., and Scott D. Lipscomb. 2004. "The Role of Music in Video Games." *Playing Computer Games: Motives, Responses and Consequences*: 282-303. Lawrence Erlbaum.

Zhou, Tao. 2012. "Understanding the effect of flow on user adoption of mobile games." *Personal and Ubiquitous Computing*, 17(4): 741:748.

Appendices

Appendix 1 – Marczewski’s Gamification Player Types

Besides explaining what drives the behavior of each of these players, Marczewski has also explored the attributes and features of games that better serve and support each type.



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Source: Andrzej's Blog <http://marczewski.me.uk/user-types/#.UsnVQNJdWSo>

Appendix 2 – Manrique’s Gamification Player Types

Victor Manrique summarizes how a game can serve different types of players through the manipulation of three different constituents: mechanics, aesthetics and story.

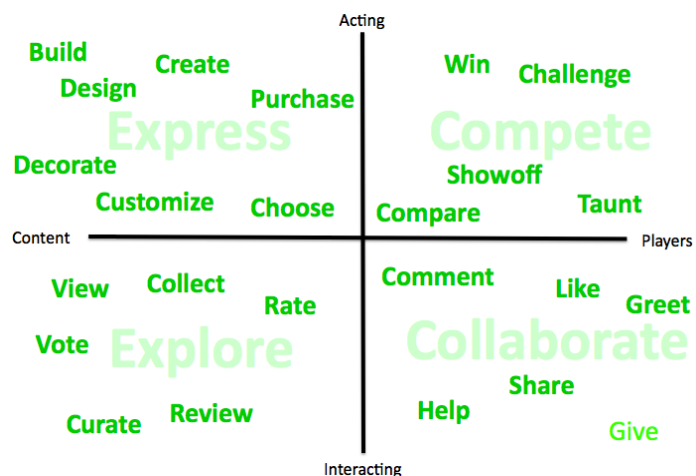
GAMIFICATION PLAYER TYPES: MEET THE PLAYERS (I)				
	WHAT THEY LOOK FOR	MECHANICS	AESTHETICS	STORY
ENJOYER	Postive emotions & pleasure: joy, curiosity, inspiration, surprise, mistery, awe	Tutorials, beginner's luck, unexpected gifts, prizes, boosters, quick success	Limited HUDs, Juicy and fresh UIs, Mistery stuff	Iceberg stories
FARMER	Extrinsic motivation on achievement: collecting, achieving and completing	Badges, trophies, achievements, virtual goods, scarcity, progress bar, levels, challenges	Plenty of HUDs, easy to see achievements, player to player interfaces, progress stats	Epic-oriented stories
SELF-SEEKER	Extrinsic motivation on meaning: status, influence and acceptance	Vanity items, Guilds, leaderboards, status points, duels, customization, elitism	Vanity graphics, guild recognition, ranking stats, elitism customization and changing environment	Status-oriented stories
NETWORKER	Extrinsic motivation on relatedness: contacts, opportunities and privileges	Privileges, networks, chat rooms, inviting friends, master-mentor, special communities, social graph	Social stats and HUDs, public information and UI, avatars and personal info display	Social-oriented stories

GAMIFICATION PLAYER TYPES: MEET THE PLAYERS (II)				
	WHAT THEY LOOK FOR	MECHANICS	AESTHETICS	STORY
ACHIEVER	Intrinsic Motivation on achievement: influence, gurus, and exclusivity	Ambassador programmes, limited in time events and items, guru mechanics, secret mechanisms, influence	visible guru HUDs, clear progress percentages, big challenges, the feeling of uncompleted	"You are the special one" or "You could be the one" story
GOAL-SEEKER	Intrinsic motivation on meaning: purpose, a bigger goal and having an impact	real meaningful choices, life or death community challenges, countdowns, social pressure, tension, good guys win	Seeing the hard road and how to get through it, making changes visible, crowded design, formal interfaces	Changing the world Story
SOCIALISER	Intrinsic motivation on relatedness: meeting people, collaboration and cooperation	social mechanics, groups and sharing, flirting, poking, gifting, co-op modes, collaboration levels	social graphs and HUDs, couple/cozy stuff, collaboration environment, chat room interfaces	Something that includes "Team work" & "collaboration/cooperation" in it

Source: Epic Win blog. <http://www.epicwinblog.net/2013/04/gamification-player-types-t-e-pyramid-ii.html>

Appendix 3 – Social engagement verbs

Amy Jo Kim associates with each major verb, several verbs that can easily be translated into product's features.



Source: Amy Jo Kim. <http://amyjokim.com/2012/09/19/social-engagement-whos-playing-how-do-they-like-to-engage/>

Appendix 4 – Companies' historical background

Nmusic⁷⁰

Nmusic is a Portuguese startup headquartered in Lisbon and founded in 2010 as part of the Diligence Capital SGPS Group. Celestino Alves, Nmusic's CEO, has created in 2002 the first digital music store in Portugal – Música Online – a format that proved to be unsustainable in the long run due to the lack of intention of Portuguese consumers to buy digital songs. After an analysis of the business context, Celestino decided to create Nmusic, which main purpose was to approach the digital music market with an innovative perspective on digital content distribution. With PT as an old partner, Nmusic developed in November 2010 its first product – musicbox, an online streaming music platform. In 2011, Pathena SGPS SA joined Nmusic as an investor and, in 2012 Nmusic was invited to integrate the Startup Lisboa project as a way of encouraging other startups to potentiate their projects.

With musicbox as a successful online music streaming platform, Nmusic aims to be a reference in music streaming and defines its differentiation by the technological capabilities of the player (e.g.: first player with automatic cash⁷¹), new features, an innovative business model (the only B2B2C business model in the world for a music streaming platform) and a strong focus on editorial content, based on an intensive market research in order to understand the preferences of consumers. The company's next challenge is internationalization and Rovio can be the strategic channel to prepare the entry in new markets.

Rovio Entertainment Ltd.⁷²

The Finnish media company, Rovio Entertainment Ltd., was born in 2003, as a result of a mobile multi-player game development competition sponsored by HP and Nokia. The winners of this competition, three students from Helsinki University of Technology, decided to found a company, at the time named Relude. When, in January 2005, the start-up received its first investment from a business angel, its name was changed to Rovio Mobile. The team had already developed 51 unsuccessful games when, in December 2009, Angry Birds was released. Rovio's team had already faced the specter of bankruptcy, but they soon realized that Angry Birds had the potential

⁷⁰ Information provided by Nmusic's website and workers.

⁷¹ Automatic cash is the tool that allows for the automatic saving of a song track as soon as it is reproduced in the player (with a minimum reproduction time of 30 seconds). Information provided by Nmusic.

⁷² Information from Rovio's Website (<http://www.rovio.com/>) and HP Startup Case Study: Angry Birds, Rovio Mobile Ltd. at <http://www.firstpost.com/facebook-sponsored-stories/video/hp-startup-case-study-angry-birds-rovio-mobile-ltd/333711y29TnaQNNsNP11.html>

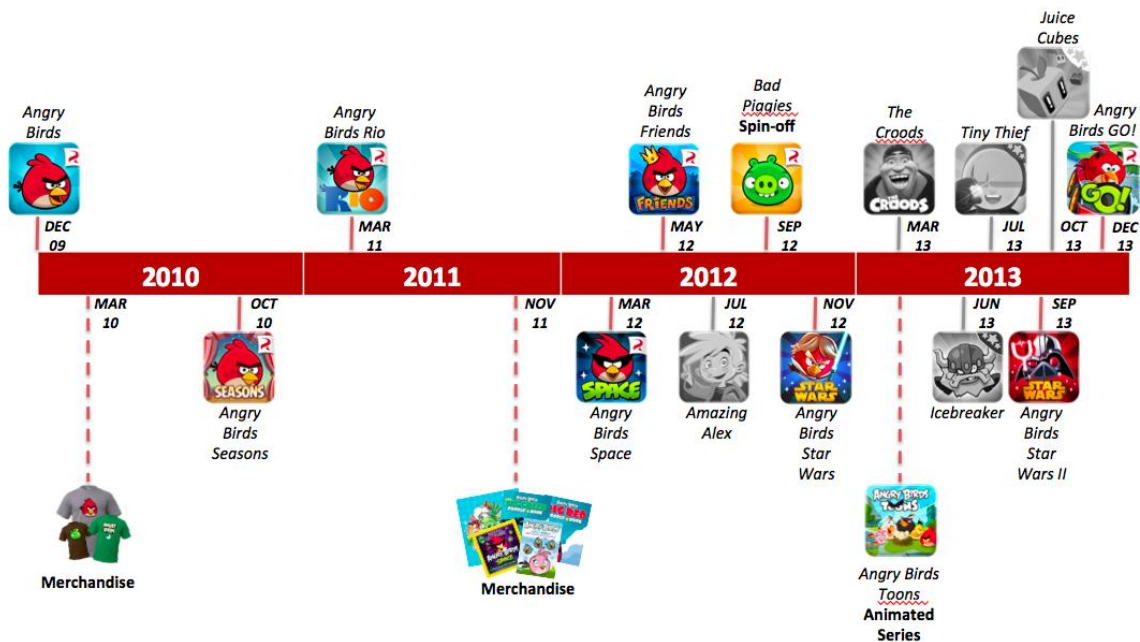
to become the hit Rovio needed to succeed. Angry Birds soon became the number one in several countries and, in May 2012, it has reached 1 billion downloads [Klara, 2011].

In the meanwhile, the company changed its name to Rovio Entertainment Ltd. in 2011. In fact, Rovio has not focused only on games, but it has adopted the position of an entertainment company. Rovio defines itself as a very agile company that it is able to respond very quickly to changes in the market, which is only possible due to a fast learning capacity. Also, the company sets apart by demonstrating to not follow the same (natural) path of other players, which is demonstrated by the growing importance of merchandising, for instance.

Overview of product portfolio

For the scope of this work project it is only relevant to examine Rovio's product portfolio since the launch of Angry Birds. Rovio has taken advantage of Angry Birds' success, opting to continuously explore this concept in different games (different environments, characters, etc.), as demonstrated in the figure bellow. All Rovio's products have followed a similar sequential path: release for Apple's iOS, for other operating systems such as Android, Symbian and Windows Phone, for PC's and video game consoles, for browsers such as Chrome and for social networks such as Facebook, Twitter and Google+. This expansion along with continuous updates, power-ups and new levels, allowed Rovio to build a solid growth for Angry Birds. Not only in mobile games, but also in other formats, Rovio has opted to expand horizontally, creating Angry Birds books, animated series, merchandising, among others. [Rovio's website]

By looking to the progress of Rovio in the last four years, we acknowledge that it is a challenge to sustain the success of Angry Birds and create products that attract consumers by their uniqueness and value proposition and still engage players, offering them the pleasure of fun.



Appendix 5 –Market Potential

An analysis of the video games and music industries, more specifically, the mobile games and music streaming segments, is necessary in order to understand the potential of a link between both industries and to foresee how this merge will evolve and its consequences for the entire sector.

The video games industry is valued on \$70.4 Bn, with 1.2 billion gamers worldwide. This number is expected to increase to 1.55 billion by 2016, whereas game revenues are expected to grow at a compound rate (CAGR) of 6.7% to \$86.1 Bn by this time. On the other hand, the music industry reaches this year \$50.5 Bn, after consecutive declines from 2008 to 2012. Forecasts predict positive growth in the following years mainly driven by digital and live music⁷³, by 2016 this industry is expected to value \$52.9. (PwC)

According to the traditional segmentation⁷⁴, the mobile segment is expected to present the highest growth (CAGR: 27.3%) and it will have taken, by 2016, 27.8% of the global games market, due to a growth of 47.6% (CAGR for tablets) and 18.8% (CAGR for smartphones) since 2012. (Smartphone & Tablet Gaming 2013) It is estimated that 33% of all downloads to smartphones and tablets were games, representing 66% of all money spent in these devices, which reinforces the growth potential of this segment. In fact, there are over 500 million mobile gamers worldwide,

⁷³ Two segments compose the music industry: live music and recorded music, which can be divided in digital and physical music. Whereas live music has been consistently growing since 2010 (\$25.2 Bn) and it is expected to attain \$30.9 Bn in revenues by 2017, recorded revenues have been declining since 2008.

⁷⁴ The traditional division of the video games industry distributes it in the following segments: (a) consoles, (b) MMO's, (c) mobile, (d) casual/social and (e) PC boxed download, by order of importance.

from which 35% are spending money. Nevertheless, it is worth noticing that, despite efforts to improve the segmentation process of this industry⁷⁵, the consequence of the merging process of the video games and music industries in terms of technological fields of application, products and value proposition will generate new segmentation analysis.

On the music side, digital music is driving the growth of the entire recorded music segment, already accounting for a 34% share of the total recorded music industry revenues⁷⁶. (IFPI 2013) There are essentially two ways of accessing digital music: downloads and streaming services⁷⁷. However music downloads represent 70% of the digital segment, online music streaming revenues have increased 40% in 2012 to \$1.1bn, compared with 8.5% growth for digital music downloads. (IFPI 2013 and Siermer&Associates)

Appendix 6 – Survey I: Market potential assessment

In order to test the potential of this new product, a market research was conducted through an online survey during three weeks, answered by 218 respondents, from which 53% are current players of mobile-casual games, 31% are past players and 16% never played this type of games. The time constraint forced the questionnaires' distribution to depend mainly on the students and Nmusic's networks, which can have a negative impact on the reliability of results. Although there is some geographical diversification, the majority of the participants are Portuguese (82%), 11% are Europeans (excluding Portugal), 5% are from Latin America, 2% from the USA and only 1% is Asiatic. In total, there are 20 different nationalities represented. In terms of gender distribution, there is a higher incidence on female respondents, which represent 61% of the sample. 71% of the respondents are aged between 18 and 25 years, whereas 14% belong to the following age range (26-35), 7% have more than 45 years, 5% have an age between 36 and 45 and 3% are below the 18 years threshold.

A comparison between the time spent playing and listening to music shows that more than 75% of mobile-casual gamers play at least once a week, from which 26% play daily, while 83% of the participants listen to music more than once a day. When asked about their interests, 50% of the

⁷⁵ Newzoo (date) proposed an alternative segmentation – Screen segmentation model – that divides the market according to the four types of screen: entertainment (TV), computer, floating and personal screen.

⁷⁶ The global expansion of the digital segment is evident: (a) from \$6.3 Bn in 2008, digital music revenues achieved \$9.8 Bn in 2013; (b) digital music revenues are expected to exceed physical by 2016; (c) in a two years' time (2011-2013) the major international music services expanded its presence from 23 countries to 100; (d) the number of digital music users (\$1.2 Bn in 2012) is expected to grow at a CAGR of 10.4% until 2016, when it will reach \$1.8 Bn users. (PWC and IFPI 2013)

⁷⁷ When music is downloaded, the file itself lives on the hard drive and can be accessed at any time without having to be downloaded each time. On the contrary, music streaming is the ability to access it on the internet temporarily without owning the content. (Tech Essentials)

respondents chose music as one of their top interests, furthermore, from the participants that currently play mobile-casual games, 50% chose music as one of the activities of their interest, besides games.

‘Entertaining’ and ‘fun’ are among the top three words respondents associated with gaming (correspond to 65% of the participants), followed by ‘competitive’ (19,3%). Similarly, ‘entertaining’ is the word respondents most associate with music (31%), followed by ‘immersive’ (25%), ‘good at providing escapism’ (18%) and creative (17%). When asked about the reasons for playing mobile-casual games, 69% of the participants stated “killing time” and 25% see it as a leisure activity. Participants were also presented with a list of features of mobile-casual games and 53% chose graphics’ quality as one of the most important feature, followed by ease of use (47%), addictiveness (33%) and story/narrative (32%). Competitiveness and mobility are the main motivations for playing online, representing 64% of the participants. 69% of the gamers from the sample affirm to play the same game “until get bored” and only 20% continue playing until they pass all the levels. Participants also stated their perception on the role of music in games, 41% thinks that music dynamises the gameplay making it more intense and thrilling, 24% feels that music enhances a sense of immersion in the game and 15% believes music supports the game narrative. Respondents stated that music could be important either for the most stressing moments of the game as for the “dead periods” of the game.

In order to further explore the potential of this product’s idea, respondents were asked about their behavior towards the soundtrack of a mobile-casual game. Only 10% of the respondents listen to the music of the game normally, 5% does not pay attention, 34% turns down the volume, 33% turns it off as soon as the game begins and 18% turns it off to listen to a personal player. Also, 56% of the participants declared valuing the possibility of selecting the soundtrack of a game; from those, 77% rated it as a very important/important feature, and 71% of the participants valued disposing from an unlimited list of music. However, 56% of the participants fear it can generate a non-contextualizing effect that can hinder performance. In fact, 46% of the participants consider that the soundtrack of a game has importance for one’s performance in the game.

In order to understand the adoption of this new game concept as a new version of a game players already know, they were asked about their behavior towards new games versions. Firstly, 55% of the respondents declared being used to play new versions of games, mainly lead by curiosity (76%), addictiveness (16%) and brand loyalty (8%). Focusing specifically on the game at study, 56% of the participants revealed having played Angry Birds and 34% have played Angry Birds

Star Wars. Moreover, from the group of gamers that are used to play new game versions, Angry Birds (Star Wars) was the one showing a higher “re-play rate” (48%).

Lastly, reinforcing the potential of Angry Birds as a mobile-casual game, Smartphone is the preferred device for 46% of the respondents to play this type of games, followed by PC’s / Laptops (38%) and Tablets (34%), whereas game Apps are the most preferred platforms (64%), followed by social platforms (32%). Online players represent 47% of the respondents.

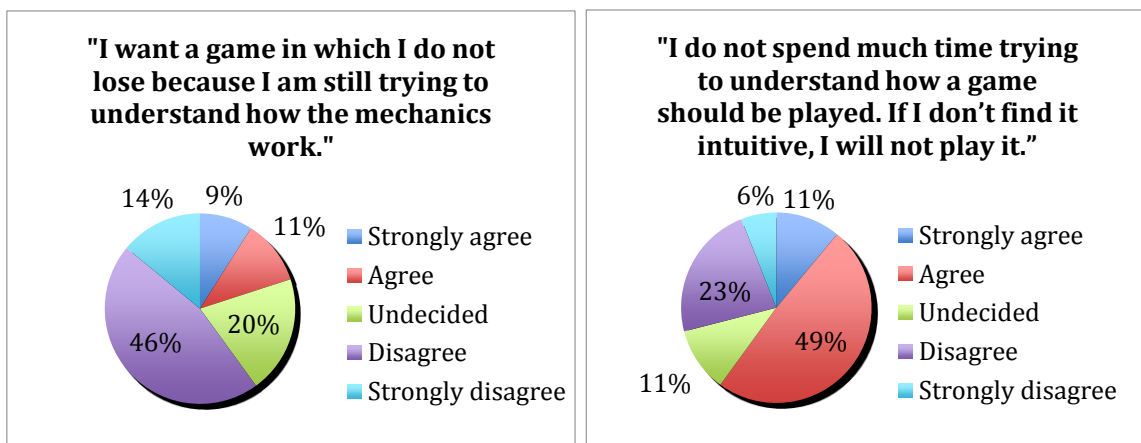
Appendix 7 – Survey II: Features potential analysis

80 people answered the second survey, however, only 36 had a relevant experience with gaming, for only this group is relevant for the analysis. The female representation is, again, larger (56%) and the majority of players (81%) are aged between 18 and 25 years old, 14 % between 26 and 35, and 5% between 36 and 45. While 81% of the respondents are Portuguese, 19% are foreign. The majority of the participants (57%) spend less than two hours per week playing, 37% plays between two to five hours weekly and 6% plays, each week, between five and ten hours (3%) or more than 10 hours (3%).

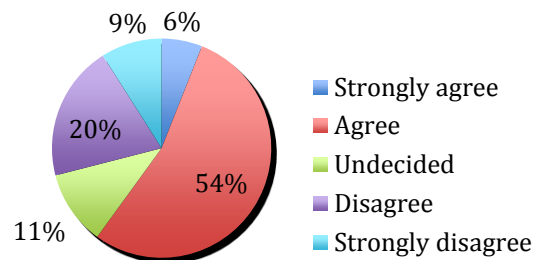
While 60% of the respondents affirm searching for positive emotions and pleasure in gaming, 34% look for collecting, achieving and completing in the game and 6% want to meet people, collaborate and compete. Respondents were asked to prioritize several game elements and the hierarchization of product features resulted as follows: Affordability (more important), Ease to install, Ease of use, Challenge, Simplicity, Rewards, Customization and Sociability (less important).

The second part of this survey assessed players’ motivations towards gaming according to the following division:

- **Mastery of controls / Ease of use**

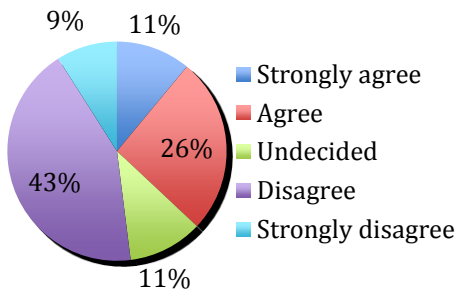


"I often feel frustrated if I don't know how the game works and, thus, I perform poorly."

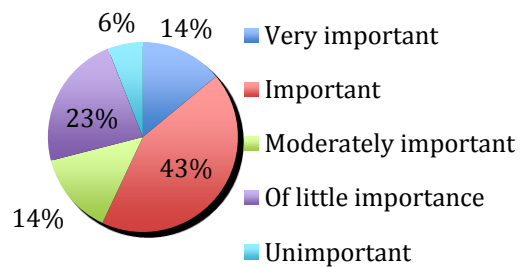


- Achievement**

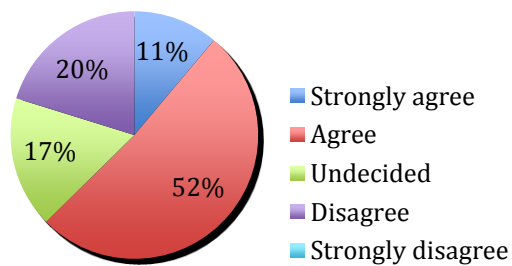
"The only reason why I play now is to get a better score."



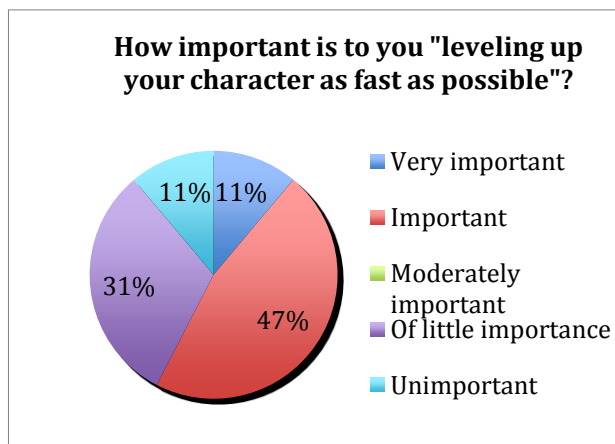
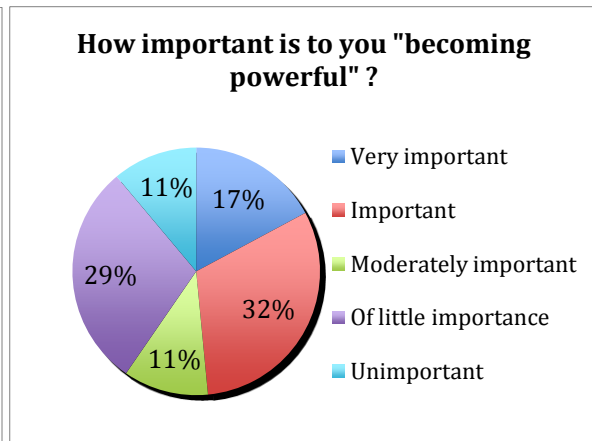
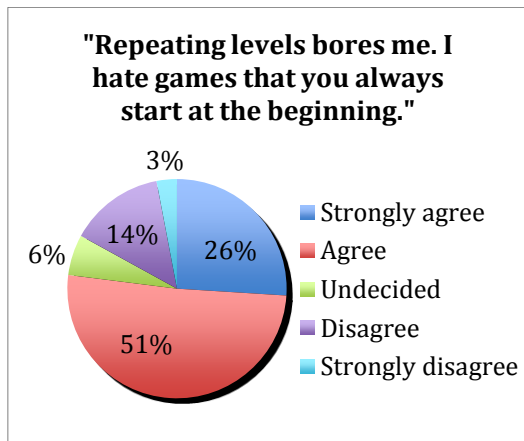
How important is to you "accumulating resources, items or money, as a proof of my progression and status"?



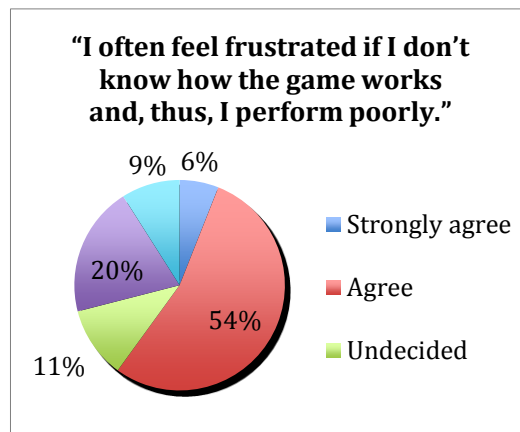
"I keep playing until I complete a level or win the game."



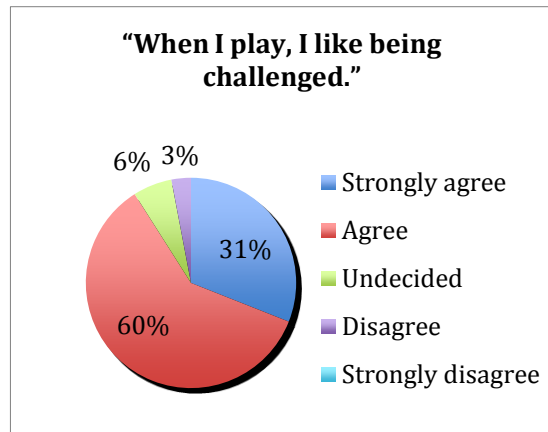
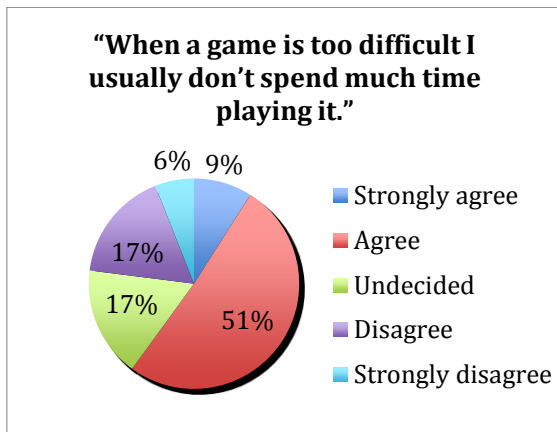
- **Progression**



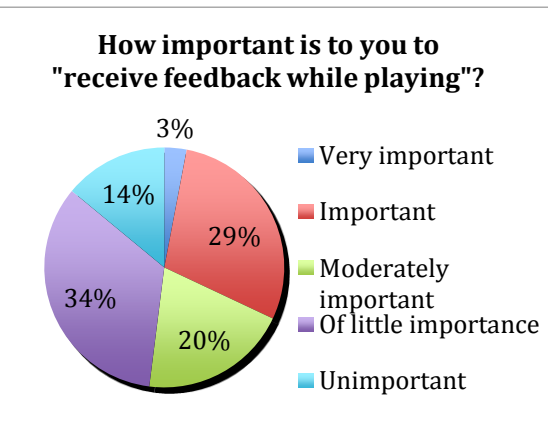
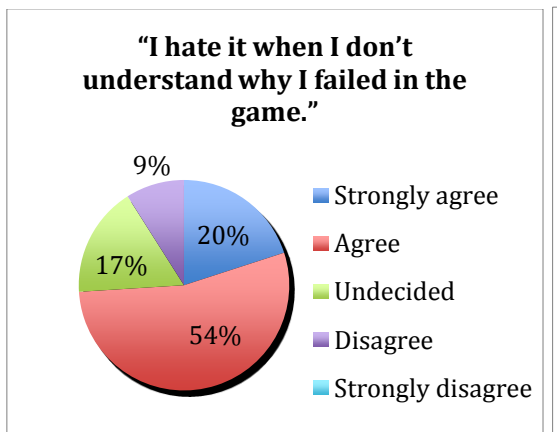
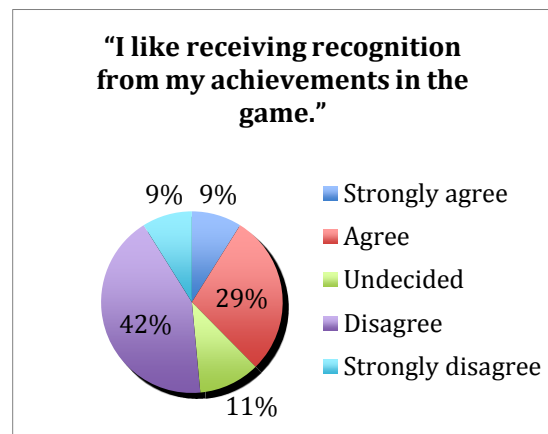
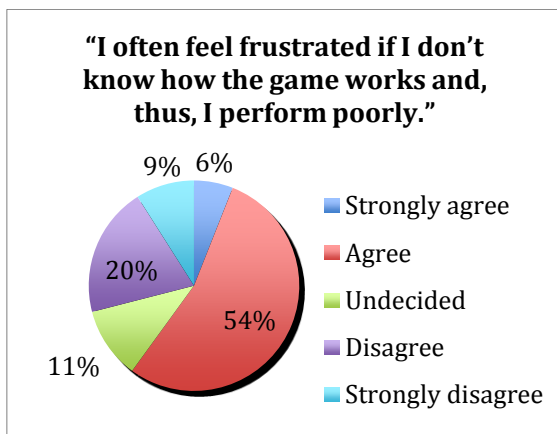
- **Competence**



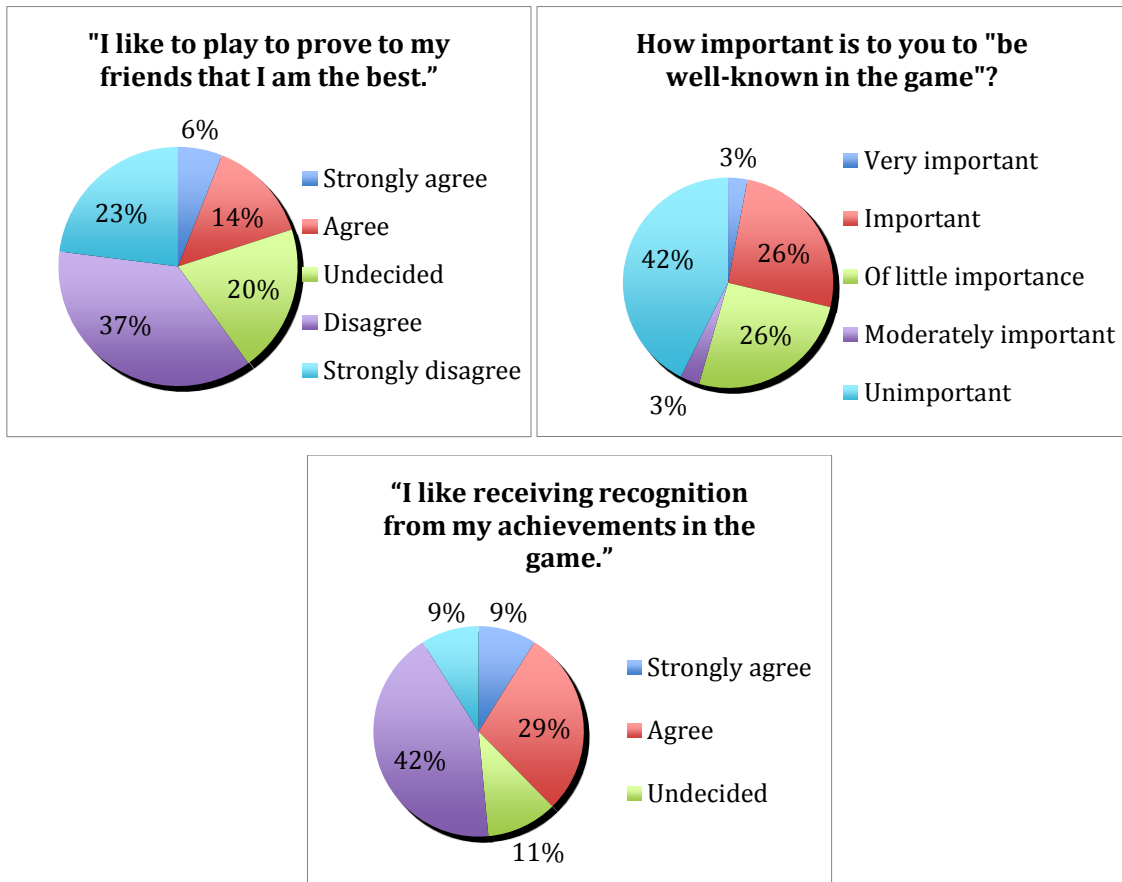
- **Level of difficulty**



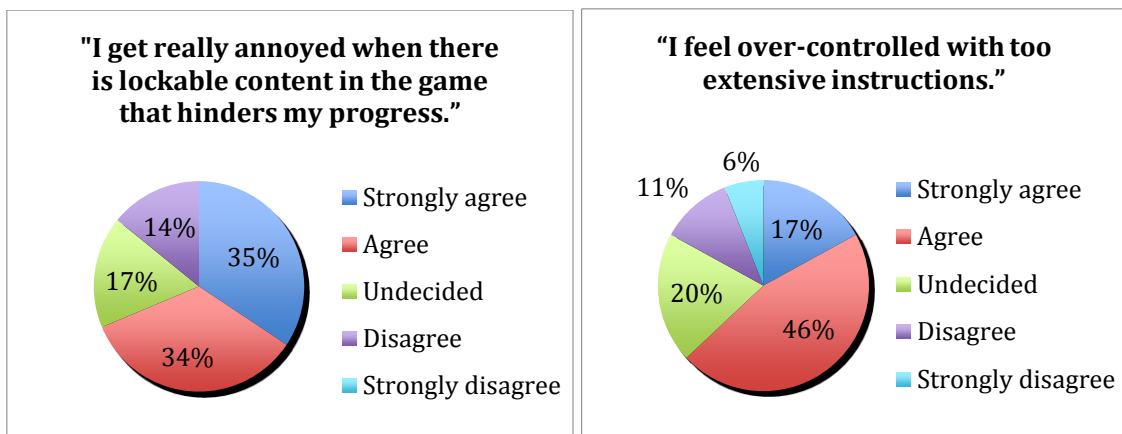
- **Feedback**



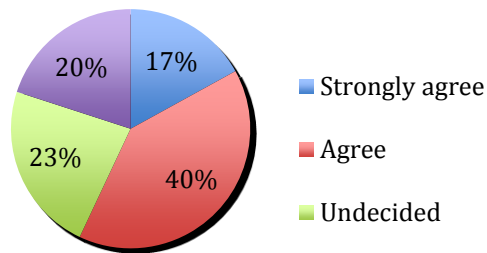
- **Recognition**



- **Autonomy**

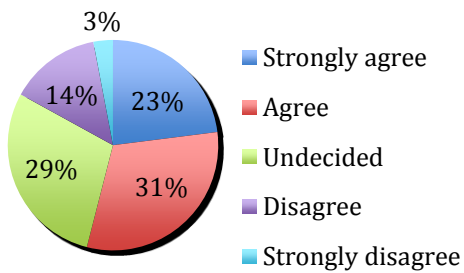


"I like to be able to control the maximum of the game settings."

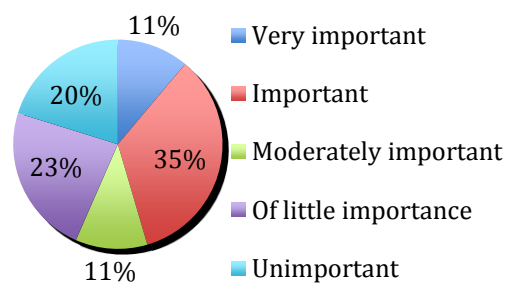


- **Role-playing**

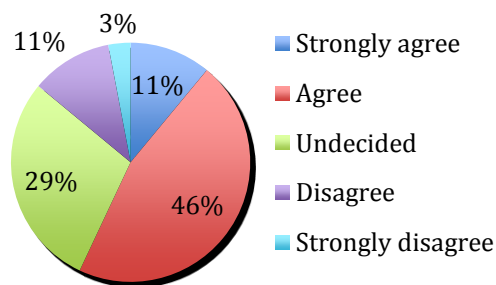
"I like to try out new roles and personalities with my characters."



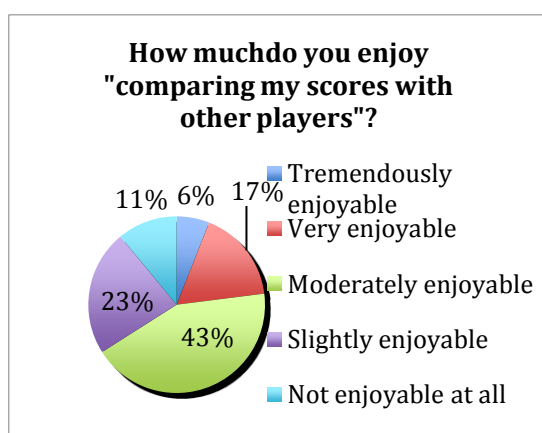
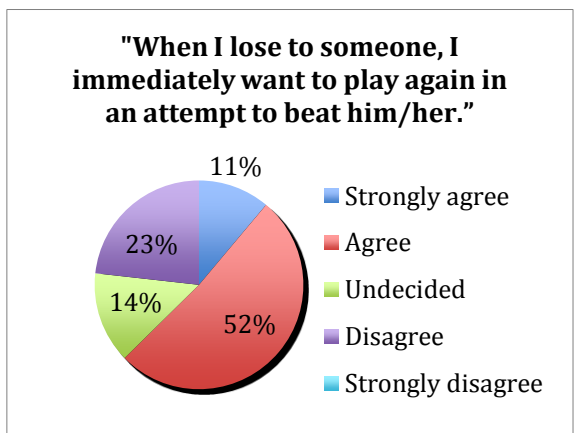
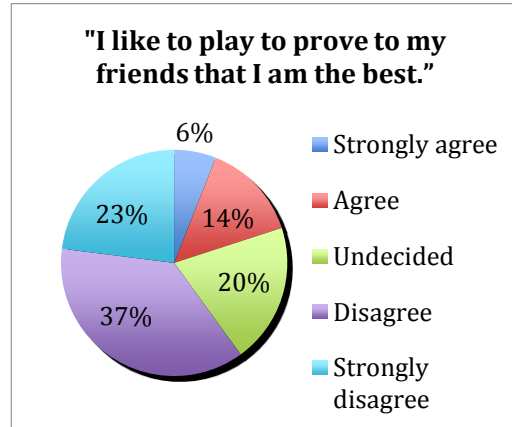
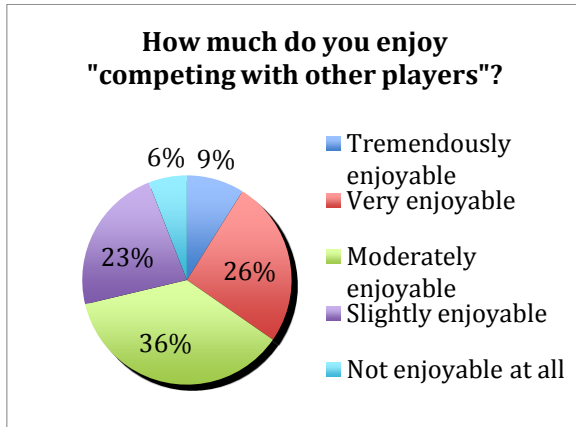
How important is to you "being immersed in a fantasy world"?



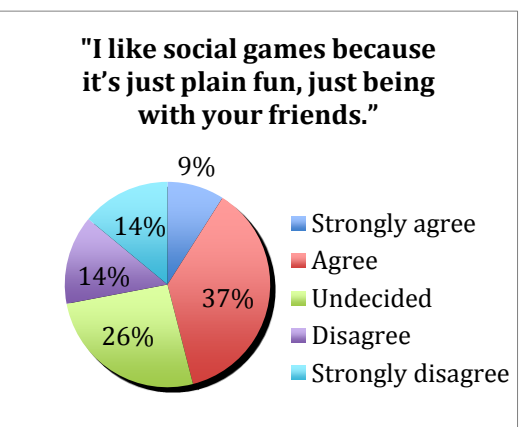
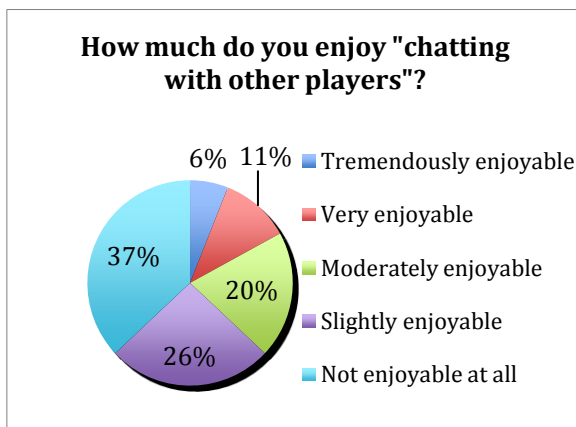
"I like the feeling of being part of a story."

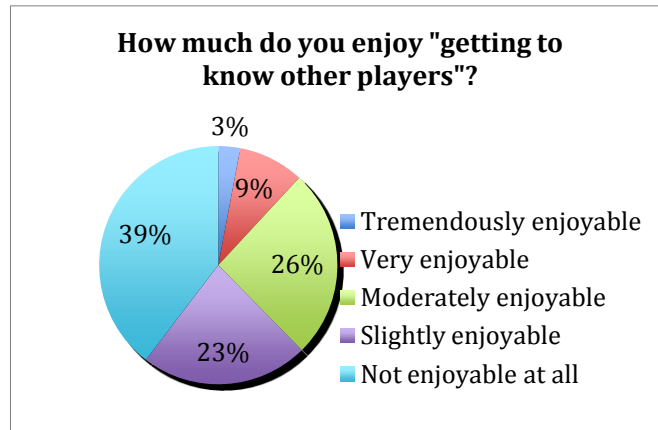


- **Competition**

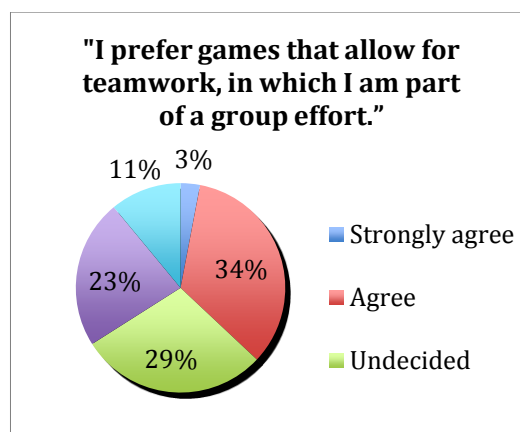
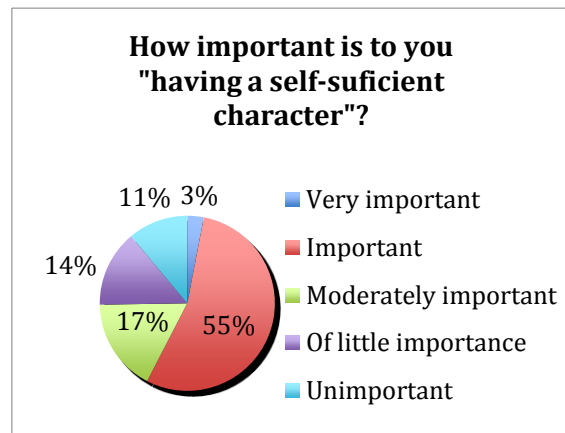
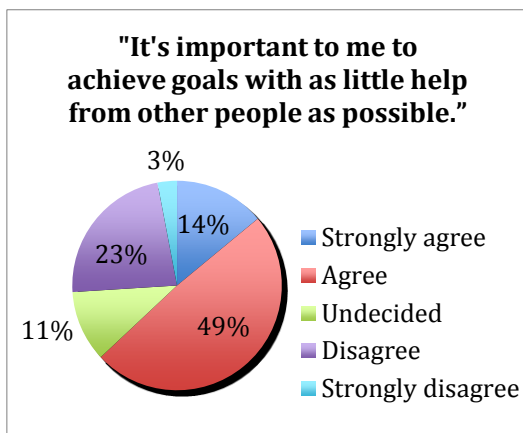


- **Socializing**

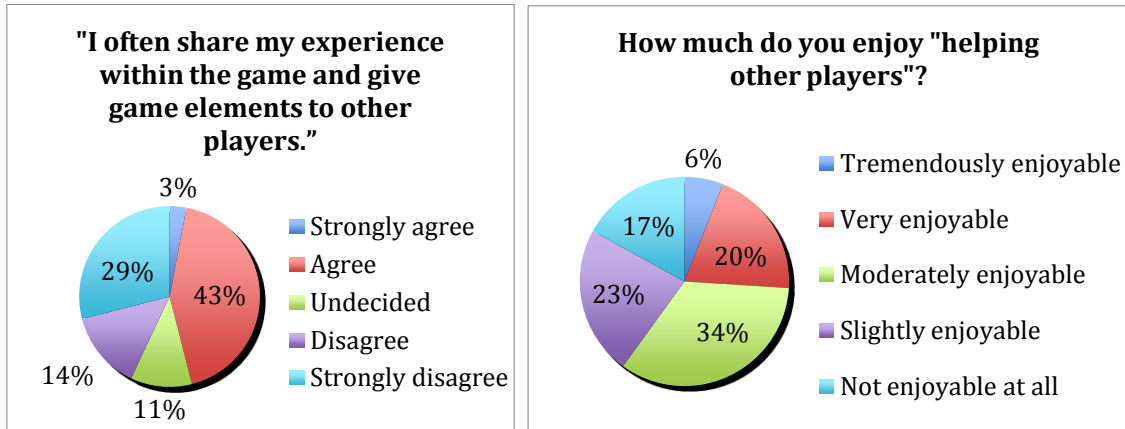




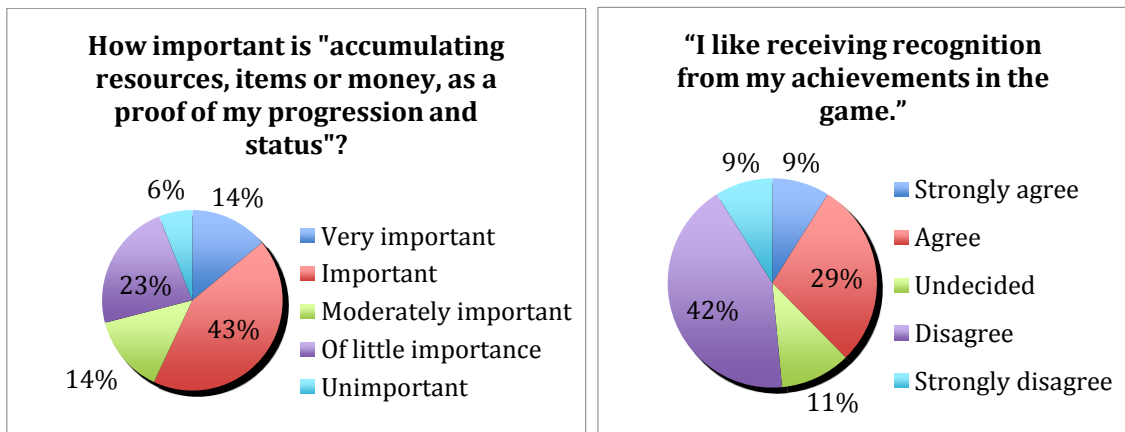
- **Teamwork**



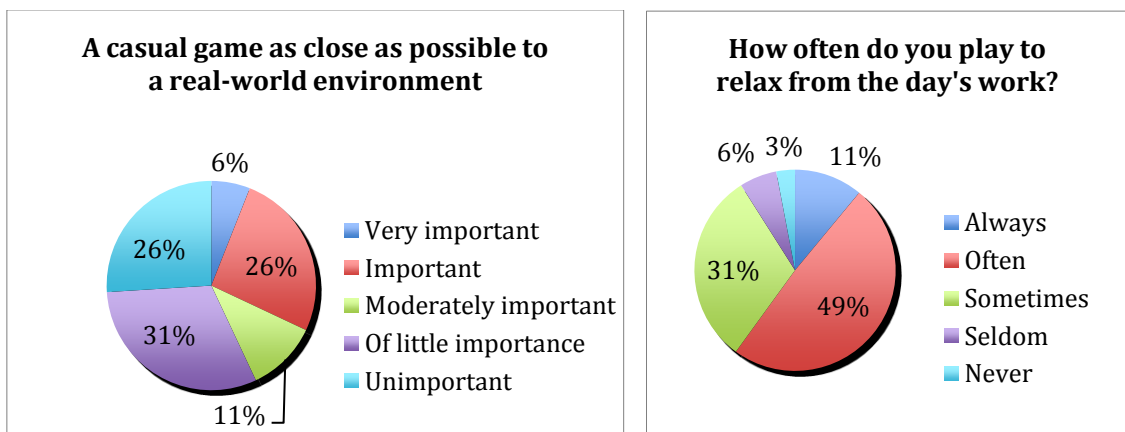
- **Collaboration**



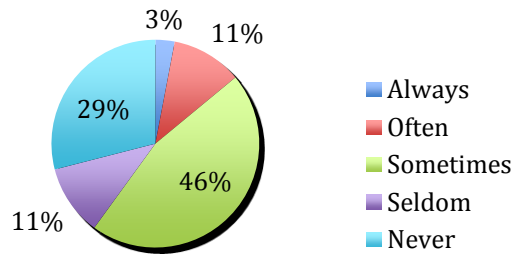
- **Rewards**



- **Escapism**

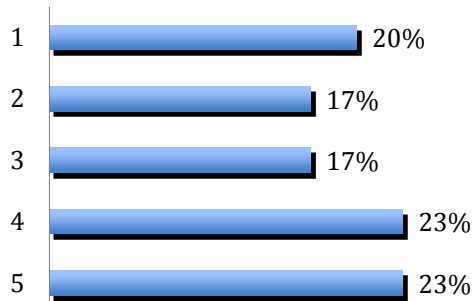


How often do you play so you can avoid thinking about some of your real-life problems or worries?

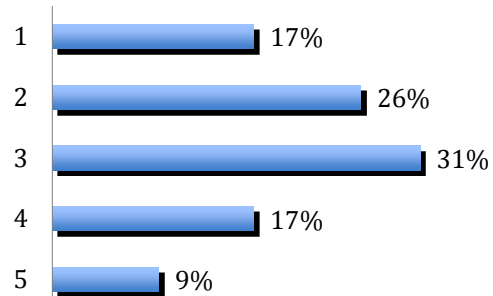


- **Customization**

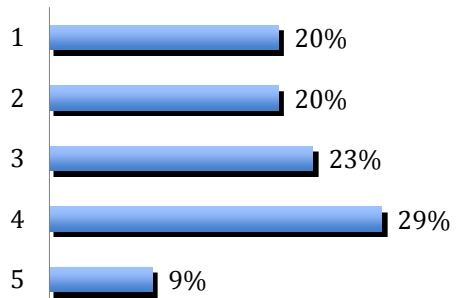
Mission/task adaptation



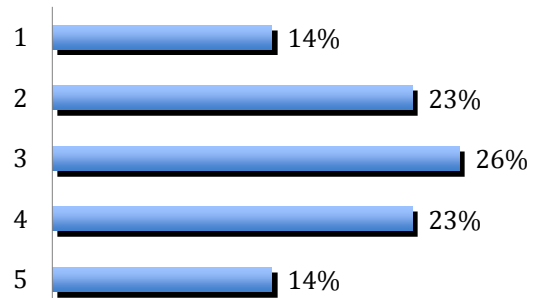
Character adaptation

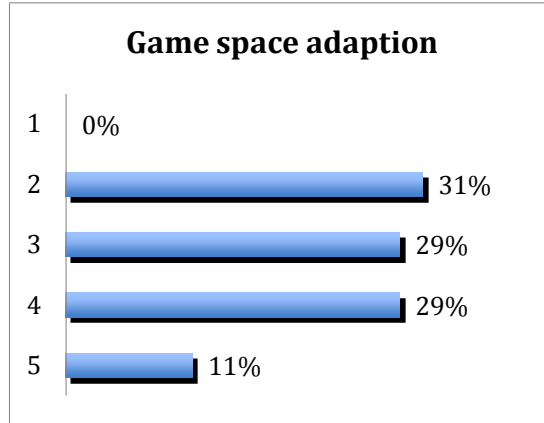


Narrative (story) adaptation

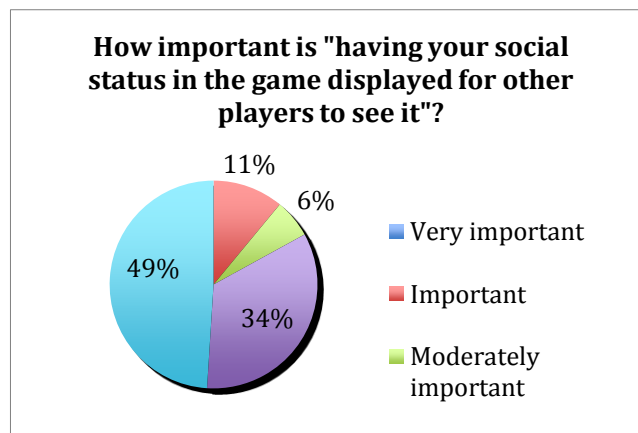


Music/sound adaption

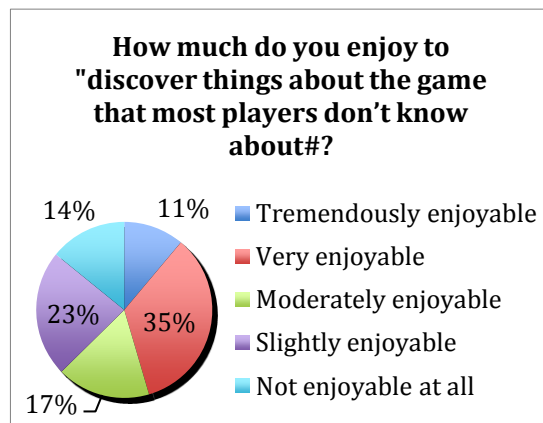




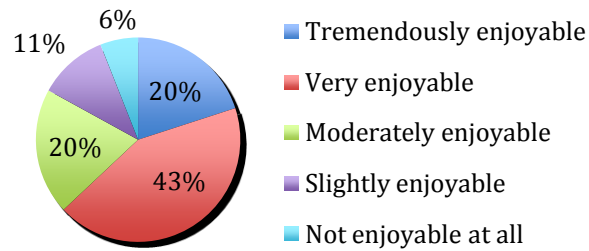
- **Social status**



- **Discovery**

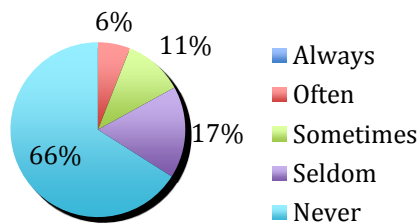


How much do you enjoy "finding surprises ("Easter Eggs") hidden in the game"?

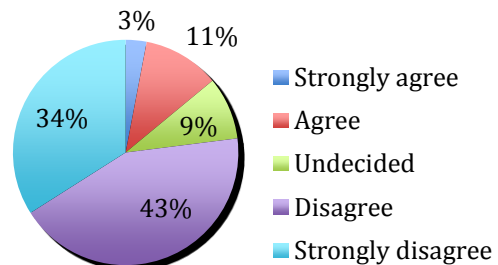


• **Relationship**

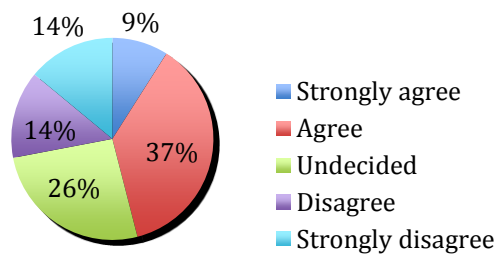
How often do you find yourself having meaningful conversations with other players?



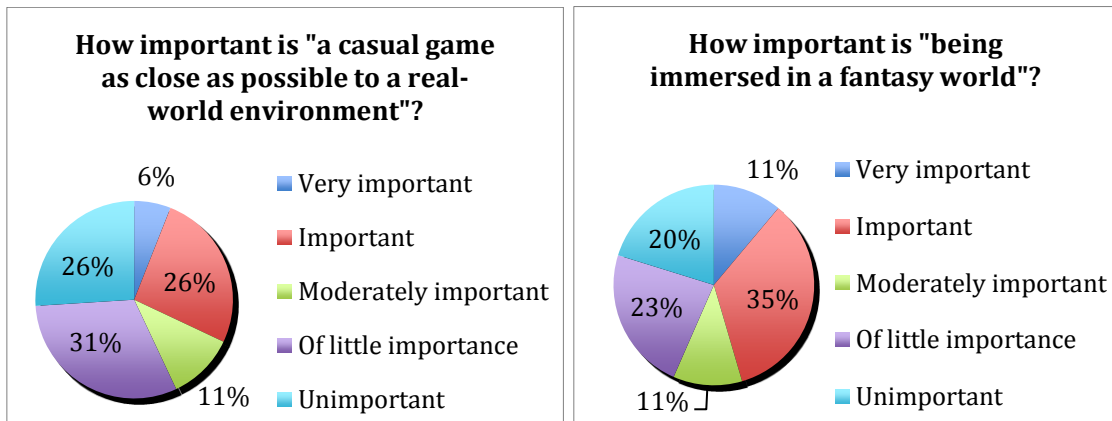
"I have made some good friends in the game."



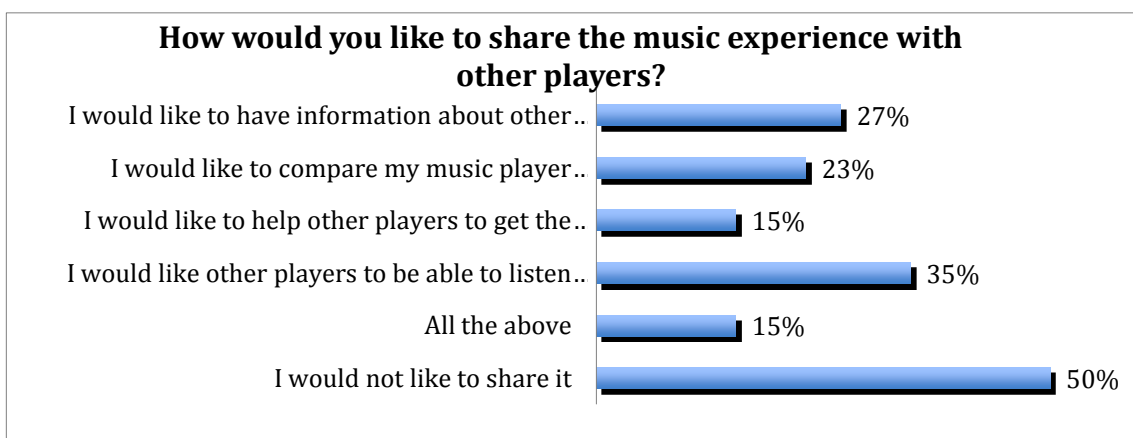
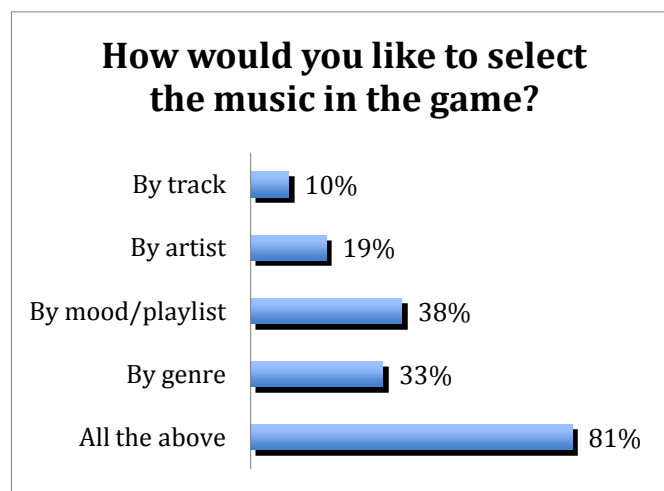
"I like social games because it's just plain fun, just being with your friends."



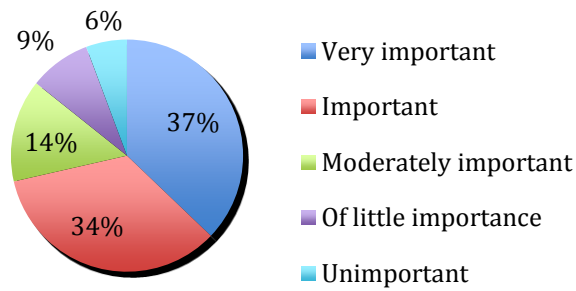
- **Fantasy**



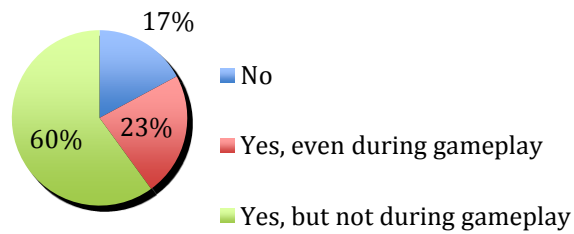
Respondents were also questioned about specific game features and this is the summary of their opinions:



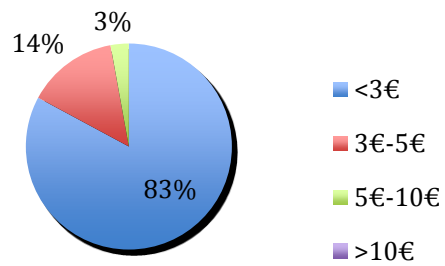
How important is to you the existence of an offline mode?



Would you like to be notified about new music tracks?



How much would you be willing to pay for a game such as AN Music?



Appendix 8 – Game elements

In order for a game to work, game elements have to be connected and to interact in several dimensions. Furthermore, all four elements are essential, “none of the elements is more important than the others” [Schell, 2008].

Are influenced Influence	Mechanics	Story	Aesthetics	Technology
Mechanics		Mechanics can both strengthen the story and allow it to emerge	Mechanics should make players feel they are in the world defined by aesthetics	Technology is the medium in which mechanics will occur
Story	The game story allow mechanics to make sense to the players		Story's events must let aesthetics emerge at the right pace and have the most impact	Technology is the medium through which the story will be told
Aesthetics	Aesthetics clearly emphasize mechanics to players	Aesthetics will reinforce the ideas of the story		Technology is the medium through which aesthetics take place
Technology	Technology provide support to game mechanics	Technology suited to the particular story of the game	Technology that allows aesthetics to come through, reinforce and amplify them	

Table: Game Elements

Source: The Art of Game design (pag. 41 and 42)

Appendix 9 – SPSS Analysis: Survey II

The following table ranks several game components/motivations according to a) the percentage of respondents who classified it as a “Very important”/ ”Tremendously enjoyable” or “Important”/”Very enjoyable” and b) the mean of the responses (being 1 “Not important at all” and 5 “Very important”). It is important to take into consideration that these motivations correspond to specific questions that were asked to the survey participants.

	SPSS %	Rank		SPSS Mean	Rank
Level of difficulty	83,7	1	Level of difficulty	3,8	1
Autonomy	81	2	Autonomy	3,62	2
Progression	67,5	3	Progression	3,37	3
Competence	59,5	4	Role-playing	3,36	4
Achievement	56,7	5	Mastery of controls	3,36	5
			Ease of Use		
Role-playing	56,7	5	Achievement	3,27	6
Mastery of controls	54	7	Feedback	3,2	7
Ease of Use					
Feedback	54	7	Discovery	3,18	8
Discovery	51,3	9	Rewards	3,15	9
Competition	43,2	10	Competition	3	10
Rewards	40,5	11	Escapism	2,87	11
Escapism	37,9	12	Collaboration	2,77	12
Collaboration	32,4	13	Fantasy	2,77	13
Socializing	24,3	14	Teamwork	2,71	14
Fantasy	29,7	15	Socializing	2,55	15
Teamwork	27	16	Recognition	2,47	16
Recognition	21,6	17	Competence	2,3	17
Relationship	16,2	18	Relationship	2,24	18
Social Status	10,8	19	Social Status	1,86	19

Note: “Customization” is not included in this list because, in this survey, players were not asked questions about the importance of this feature, but only about the relative importance of several dimensions of customization (space adaption, character adaption, task adaption, among others). Customization will be ranked according to ranking generated on Survey I.

Appendix 10 – Hierarchy table (complete)

Rank	Need description	Game element
1	Affordability • Freemium	Technology
2	Ease to install • Available in apps or websites • Synchronicity across several devices	
3	Ease of use • Smaller player • Simple mechanics • Easy instructions (tutorials)	
4	Fiction and appearance • Graphics quality • Game narrative	Aesthetics and Story
5	"Casualty" • Short engagement loops • Interruptibility	Mechanics
6	Challenge • "Right level of difficulty" • Quick success • Magic operator	Mechanics
7	Simplicity • Limited HUDs • Limited options • Notifications (not during gameplay)	Aesthetics and Mechanics
8	Autonomy • Unlockable content	Mechanics
9	Offline mode	Technology
10	Progression • Levels	Mechanics
11	Role-playing • Video stories (<i>Toons</i>) • Music characters	Story
12	Feedback • Visible status	Mechanics
13	Competition • Tournaments	Mechanics and technology
14	Customization • Character (avatar) and music player	Mechanics and technology
15	Rewards • Music • Power-ups • Extra challenges	Mechanics and technology
16	Social interaction (music experience) • Socializing • Collaboration • Visible status	Technology and mechanics

Appendix 11 – Product Concepts

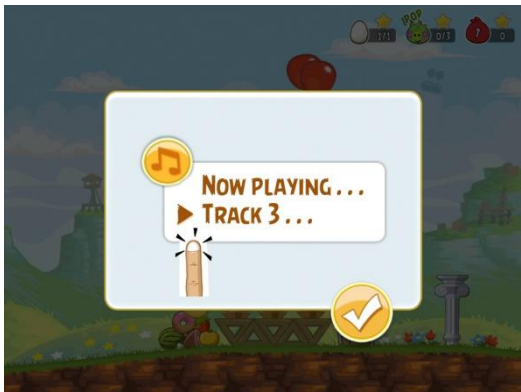
Concept 1



Screenshot 1(1): Home page



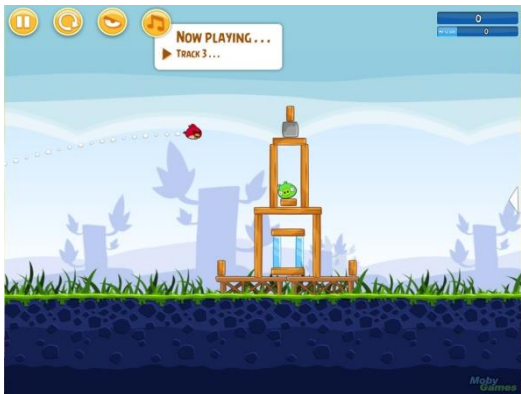
Screenshot 1(2): Moods



Screenshot 1(3) : Tutorial



Screenshot 1(4): Level selection



Screenshot 1(4): Smaller player

Concept 1		
Criteria	Valuation	
Price	4	1,252
User friendliness	4,5	1,125
Fun/Innovation	2	0,376
Autonomy/ Customization	1	0,125
Sociability	2	0,25
Total	3,003	

Concept 1 Evaluation

Concept 2



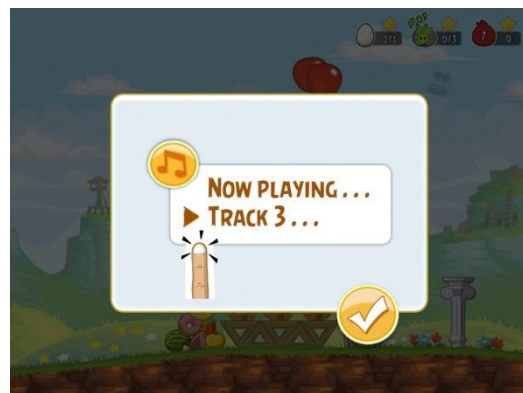
Screenshot 2 (1): Homepage



Screenshot 2 (2): Research filters



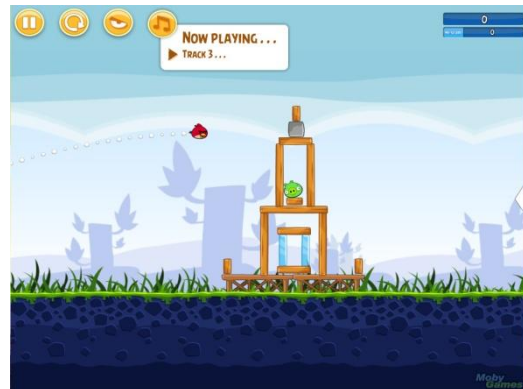
Screenshot 2 (3): Set lists



Screenshot 2 (4): Tutorial



Screenshot 2 (5): Level selection



Screenshot 2 (6): Smaller Player

Concept 2		
Criteria	Valuation	
Price	3	0,939
User friendliness	5	1,25
Fun/Innovation	1,5	0,282
Autonomy/ Customization	2	0,25
Sociability	2	0,25
Total	2,975	

Concept 2 Evaluation

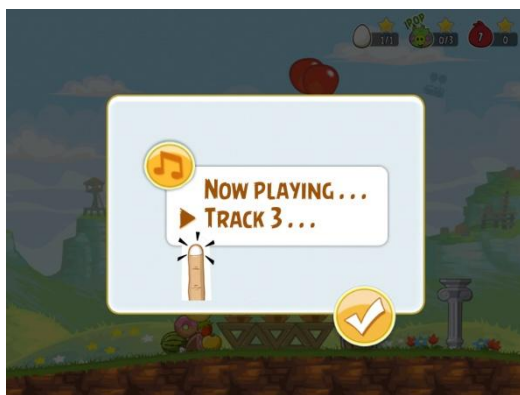
Concept 3



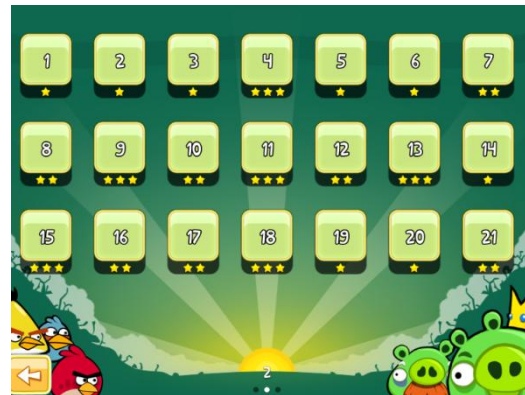
Screenshot 3 (1): Homepage



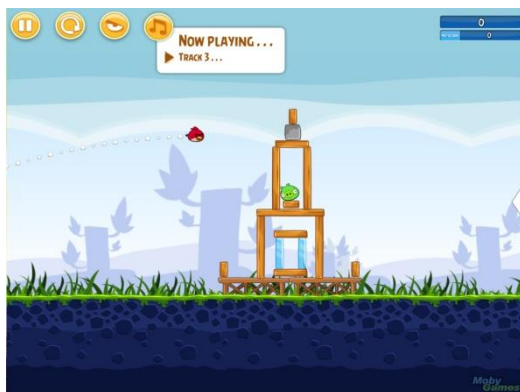
Screenshot 3 (2): Characters genres



Screenshot 3 (3): Tutorial



Screenshot 3 (4): Level selection



Screenshot 3 (5): Smaller player

Concept 3		
Criteria	Valuation	
Price	4	1,252
User friendliness	4,75	1,1875
Fun/Innovation	2	0,376
Autonomy/Customization	1	0,125
Sociability	2	0,25
Total	3,1905	

Concept 3 Evaluation

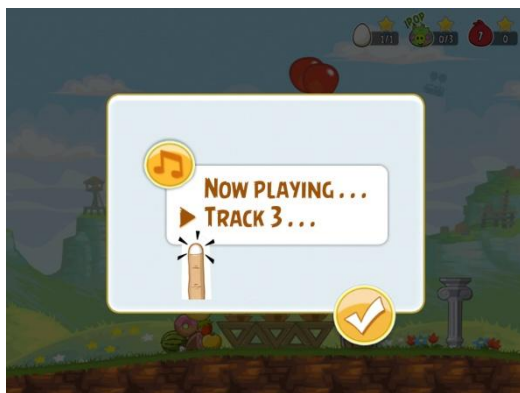
Concept 4



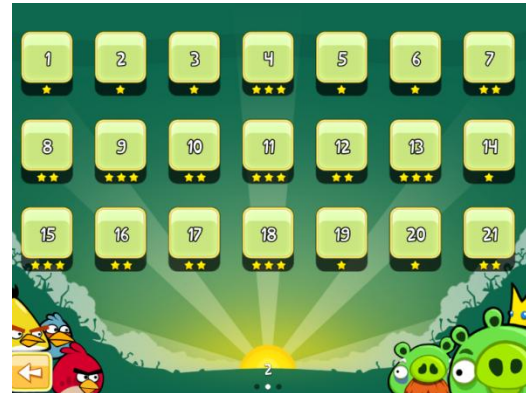
Screenshot 4 (1): Homepage



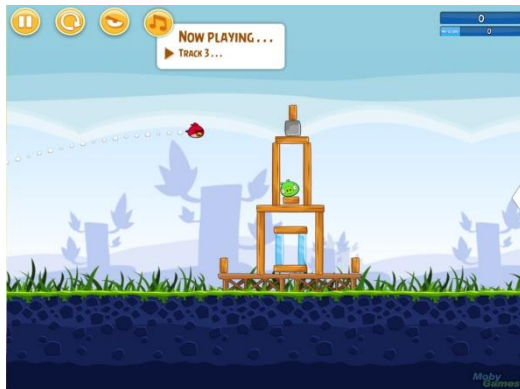
Screenshot 4 (2): Music genres



Screenshot 4 (3): Tutorial



Screenshot 4 (4): Level selection



Screenshot 4 (5): Smaller Player

Concept 4		
Criteria	Valuation	
Price	3	0,939
User friendliness	4,75	1,1875
Fun/Innovation	3,5	0,658
Autonomy/ Customization	1	0,125
Sociability	2	0,25
Total	3,1595	

Concept 4 Evaluation

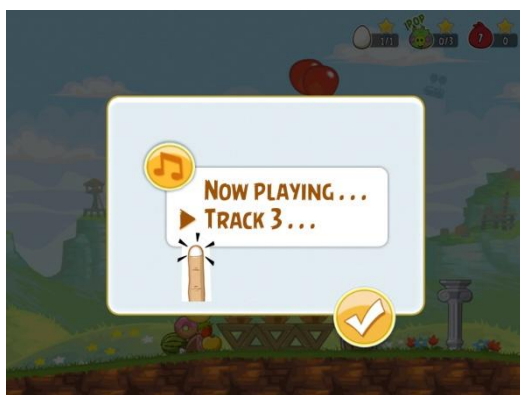
Concept 5



Screenshot 5 (1): Homepage



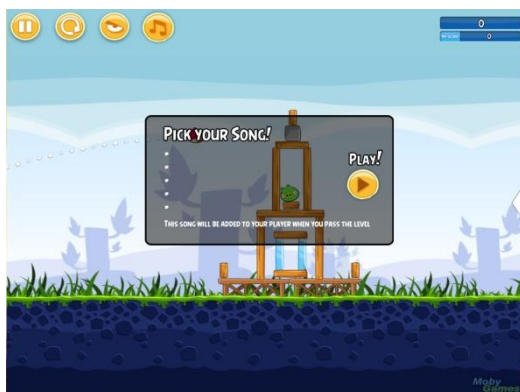
Screenshot 5 (2): Music Genres



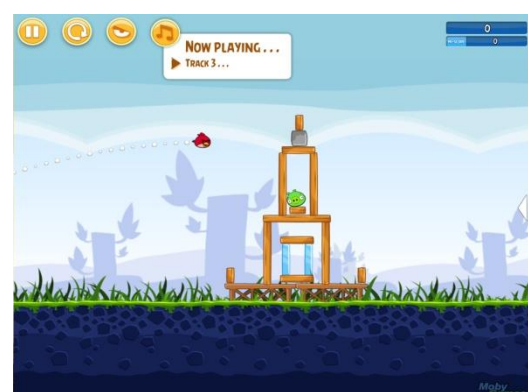
Screenshot 5 (3): Tutorial



Screenshot 5 (4): Level selection



Screenshot 5 (5): "Pick your song"



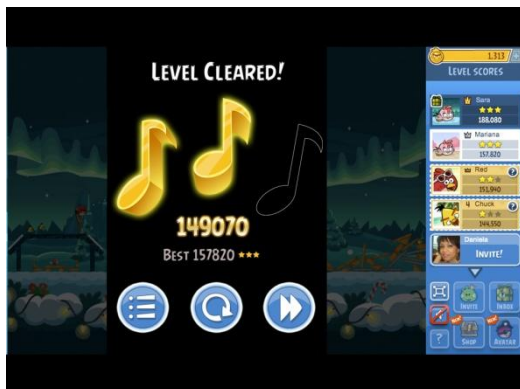
Screenshot 5 (6): Smaller Player



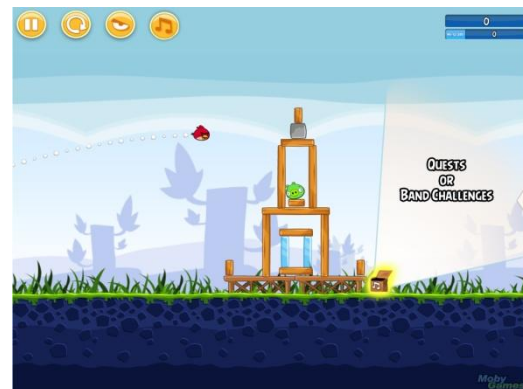
Screenshot 5 (7): Special prizes



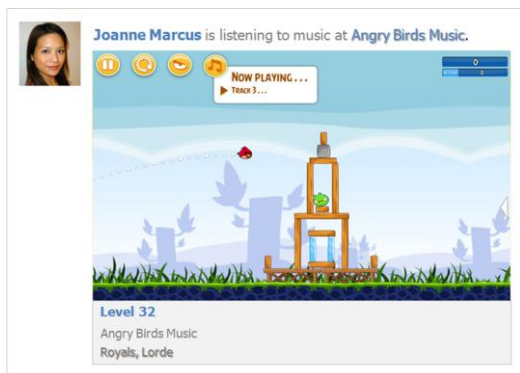
Screenshot 5 (8): Multi-player tournaments



Screenshot 5 (9): Feedback mechanisms



Screenshot 5 (10): New quests and challenges



Screenshot 5 (11): Shared activity

Concept 5		
Criteria	Valuation	
Price	4,5	1,4085
User friendliness	4,25	1,0625
Fun/Innovation	5	0,94
Autonomy/ Customization	4	0,5
Sociability	4	0,5
Total	4,411	

Concept 5 Evaluation

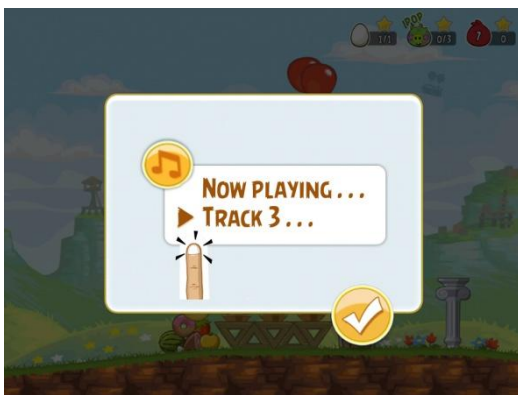
Concept 7



Screenshot 7 (1): Homepage



Screenshot 7 (2): Game Map



Screenshot 7 (3): Tutorial



Screenshot 7 (4): Level Selection



Screenshot 7 (5): "Pick your song"



Screenshot 7 (6): Disco Room

Concept 7		
Criteria	Valuation	
Price	4,5	1,4085
User friendliness	4,25	1,0625
Fun/Innovation	4	0,752
Autonomy/ Customization	4	0,5
Sociability	2	0,25
Total	3,973	

Concept 7 Evaluation